

4. Amazon has a regular and established place of business in this District including distribution facilities, employees, and other business. For example, Amazon has a fulfillment center at 2093, 2209 Rutland Drive, Austin, TX 78758. Further, Amazon currently employs over 5,600 workers in the Austin area and has plans to add over 800 additional jobs.

<https://www.statesman.com/news/20190328/amazon-plans-austin-expansion-that-will-add-800-jobs>. Amazon offers its products and services, including those accused herein of infringement, to customers located in Austin. Amazon derives financial benefits through its business in Austin.

5. Amazon has placed or contributed to placing infringing products like the Amazon Echo into the stream of commerce via an established distribution channel knowing or understanding that such products would be sold and used in the United States, including in the Western District of Texas. On information and belief, Amazon also has derived substantial revenues from infringing acts in the Western District of Texas, including from the sale and use of infringing products like the Amazon Echo.

6. Amazon had constructive notice of the '431 Patent based on Parus's marking at least as of June 18, 2007.

7. Amazon had constructive notice of the '084 Patent based on Parus's marking at least as of February 21, 2018.

JURISDICTION AND VENUE

8. This is an action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code. Accordingly, this Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

9. This Court has specific personal jurisdiction over Defendant at least in part because Defendant conducts business in this Judicial District. Parus's causes of action arise, at least in part, from Defendant's contacts with and activities in the State of Texas and this Judicial

District. Upon information and belief, each Defendant has committed acts of infringement within the State of Texas and this Judicial District by, *inter alia*, directly and/or indirectly using, selling, offering to sell, or importing products that infringe one or more claims of the '431 Patent and/or the '084 Patent.

10. Defendant has committed acts within this District giving rise to this action, and have established sufficient minimum contacts with the State of Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

11. Venue is proper in this Judicial District pursuant to 28 U.S.C. §§ 1391(b), (c), and 1400(d). Venue is proper for Amazon.com, Inc. because Amazon.com, Inc. (1) has a regular and established place of business in this Judicial District, and (2) has committed and continues to commit acts of patent infringement in this Judicial District by, *inter alia*, directly and/or indirectly using, selling, offering to sell, or importing products that infringe one or more claims of the '431 Patent and/or the '084 Patent.

COUNT I

AMAZON'S INFRINGEMENT OF U.S. PATENT NO. 7,076,431

12. Parus restates and incorporates by reference all of the allegations made in the preceding paragraphs as though fully set forth herein.

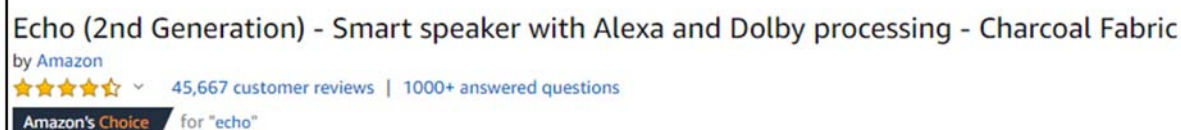
13. Parus is the owner, by assignment, of the '431 Patent. A true copy of the '431 Patent granted by the U.S. Patent & Trademark Office is attached as Exhibit 1.

14. Amazon has directly infringed, and continues to directly infringe, literally or under the doctrine of equivalents, at least independent claim 1 of Parus's '431 Patent by making, using, selling, and/or offering for sale its products that include Amazon's Alexa virtual assistant ("Alexa"), in the United States, in violation of 35 U.S.C. § 271(a).

15. Amazon had constructive notice of the '431 Patent based on Parus's marking at least as of June 18, 2007. Upon filing of the complaint or shortly thereafter, Defendant had actual knowledge of the '431 Patent.

16. Amazon's acts of direct infringement of the '431 Patent are willful, and have caused and will continue to cause substantial damage and irreparable harm to Parus, and Parus has no adequate remedy at law.

17. Various Amazon products with Alexa made or sold by Amazon directly infringe at least independent claim 1 of the '431 Patent, including at least the Amazon Echo and other Amazon products that incorporate Alexa ("Amazon Accused Products"). For example, the Amazon Echo comes with Alexa preinstalled.



See, e.g.,

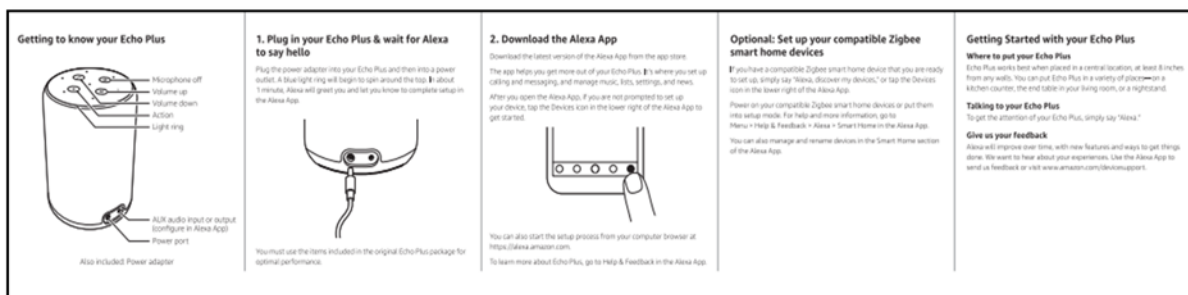
https://www.amazon.com/gp/product/B06XCM9LJ4/ref=s9_acsd_al_bw_c_x_6_w?pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-4&pf_rd_r=7WEC0RE7WX15PC8SY4BY&pf_rd_t=101&pf_rd_p=26ee7d18-7cee-420f-a95c-f4be02106756&pf_rd_i=9818047011.

WHERE CAN I USE ALEXA?

In order to use Alexa, you'll need a device that integrates the voice technology. This typically means an Amazon device, such as an [Echo](#), [Echo Dot](#), or [Echo Show](#), but this cloud-based personal voice assistant has also been integrated with some third-party systems. Devices like the [Fire TV](#) are also compatible with Alexa, as are some third-party devices: the [Ecobee Switch+ light switch](#), the [LG InstaView refrigerator](#), and the aforementioned [Sonos One](#) speaker. Someone even programmed Alexa to work with a [Big Mouth Billy Bass](#).

See, e.g., What is Alexa, and what can Amazon's virtual assistant do for you? (Feb. 16, 2019), available at <https://www.digitaltrends.com/home/what-is-amazons-alexa-and-what-can-it-do/>.

18. Further, Amazon makes instructions available for setting up and using the Amazon Echo in conjunction with Alexa.



See, e.g., https://m.media-amazon.com/images/G/01/kindle/merch/2018/Alexa/User_Guide/Update/Echo_Plus_2nd_Gen_QSG_US_CB1539033940.pdf?pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandise-search-5&pf_rd_r=GT6YH640T1R7NT78C62S&pf_rd_t=101&pf_rd_p=116e29b1-6379-409e-a135-db7ad24bd07e&pf_rd_i=18116225011.

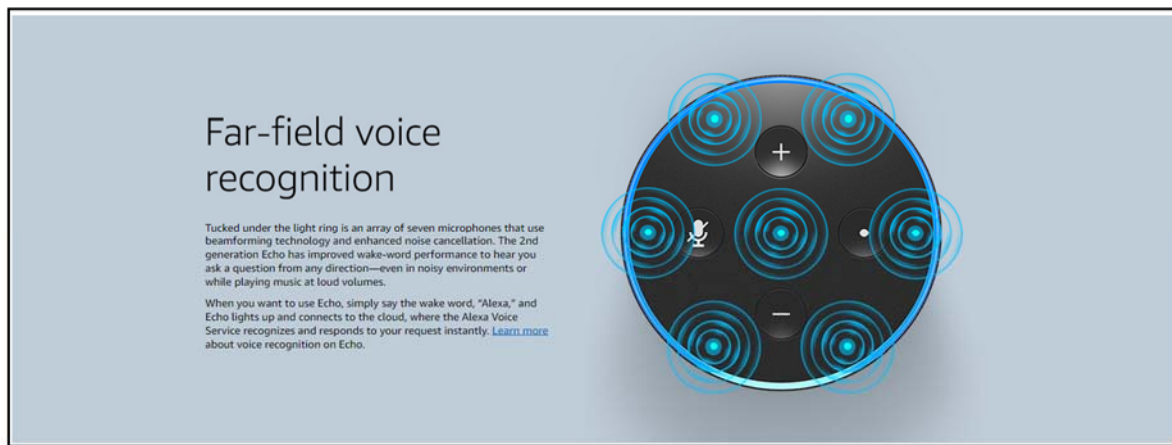


See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=echo&qid=1562871943&s=gateway&sr=8-2.

19. Each Amazon Accused Product comprises a system for retrieving information from pre-selected web sites by uttering speech commands into a voice enabled device and for providing to users retrieved information in an audio form via said voice enabled device. See e.g., Andrew Nusca, How voice recognition will change the world (Nov. 4, 2011), available at <https://www.zdnet.com/article/how-voice-recognition-will-change-the-world/>; Gene Munster, Will Thompson, Annual Digital Assistant IQ Test – Siri, Google Assistant, Alexa, Cortana (Jul.

25, 2018), available at <https://loupventures.com/annual-digital-assistant-iq-test-siri-google-assistant-alexa-cortana/>; Voice Browsing (Jan. 29, 2019), available at <https://www.w3.org/standards/webofdevices/voice>; What is Alexa, and what can Amazon's virtual assistant do for you? (Feb. 16, 2019), available at <https://www.digitaltrends.com/home/what-is-amazons-alexa-and-what-can-it-do/>; Alexa Voice Service, available at <https://developer.amazon.com/alexa-voice-service>; Alexa Skills Set, Amazon Alexa, <https://developer.amazon.com/en-US/alexa/alexa-skills-kit>.

20. For example, each of the Amazon Accused Products, including the Amazon Echo, includes a microphone and a speaker:



See, e.g., https://www.amazon.com/dp/B07456BG8N?tag=googhydr-20&hvadid=333263006615&hvpos=1t1&hvnetw=g&hvrnd=17718345068411276924&hvpone=&hvptwo=&hvqmt=e&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=1018127&hvtargid=kwd-295921616770&ref=pd_sl_2g7cb1h5ze_e#tech.



See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=%20echo&qid=1562871943&s=gateway&sr=8-2.

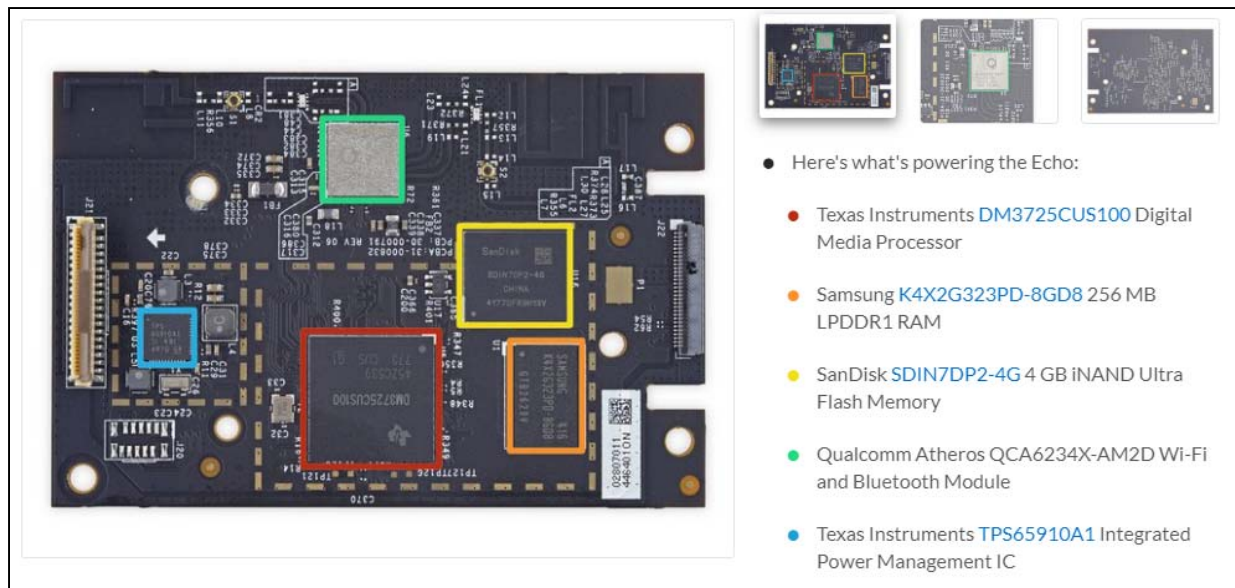
But really, what exactly is Alexa? When you ask Alexa a question, what you're doing is communicating with a cloud-based service. Amazon has designed the Alexa Voice Service (AVS) to mimic real conversations, but you're actually using intuitive voice commands to get this service to perform specific tasks. "Alexa" is simply the "wake word" that alerts the service to start listening to your voice. For most devices, you just have to say it to get a response.

Here's how Amazon describes the [Alexa Voice Service](#) on its developer page:

"The Alexa Voice Service (AVS) is Amazon's intelligent voice recognition and natural language understanding service that allows you to voice-enable any connected device that has a microphone and speaker."

What is Alexa, and what can Amazon's virtual assistant do for you? (Feb. 16, 2019), available at <https://www.digitaltrends.com/home/what-is-amazons-alexa-and-what-can-it-do/>.

21. The Amazon Accused Products in conjunction with Alexa include a computer, said computer operatively connected to the internet. For example, the Amazon Echo includes a Texas Instruments DM3725 ARM Cortex-A8 processor.




See, e.g., <https://www.ifixit.com/Teardown/Amazon+Echo+Teardown/33953>

22. That computer is operatively connected to the internet because the Amazon Echo includes both Wi-Fi connectivity and cellular connectivity.

Echo Plus	
Size	5.8" x 3.9" x 3.9" (148 x 99 x 99 mm)
Weight	27.5 oz. (780 grams) <i>Actual size and weight may vary by manufacturing process</i>
Wi-Fi connectivity	Dual-band Wi-Fi supports 802.11 a/b/g/n/ac (2.4 and 5 GHz) networks. Does not support connecting to ad-hoc (or peer-to-peer) Wi-Fi networks.
ZigBee connectivity	Built-in ZigBee smart home hub supports ZigBee light bulbs, locks, sensors, plugs, and in-wall switches.
Bluetooth connectivity	Advanced Audio Distribution Profile (A2DP) support for audio streaming from your mobile device to Echo or from Echo to your Bluetooth speaker. Audio/Video Remote Control Profile (AVRCP) for voice control of connected mobile devices. Hands-free voice control is not supported for Mac OS X devices. Bluetooth speakers requiring PIN codes are not supported.
Audio	3.0" (76.2 mm) neodymium woofer and 0.8" (20 mm) tweeter
Alexa app	The Alexa app is compatible with Fire OS, Android, and iOS devices. A list of supported operating systems can be found here .
Accessibility Features	The Alexa app and Alexa-enabled products include several features for customers with accessibility needs related to vision, hearing, mobility, and speech. Learn more about Alexa accessibility .
Warranty and Service	1 year limited warranty and service included . Optional 1-year , 2-year , and 3-year extended warranty available for U.S. customers sold separately. Use of Echo Plus is subject to the terms found here .
Setup Technology	Amazon Wi-Fi simple setup enables customers to connect smart devices to their Wi-Fi network in a few easy steps. Wi-Fi simple setup is another way Alexa is always getting smarter. Learn more
Included in the Box	Echo Plus, power adapter (30W), and Quick Start Guide.
Generation	Echo Plus 2nd Generation - 2018 release

See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=echo&qid=1562871943&s=gateway&sr=8-2

Be together more



Calling

Making calls with Alexa is easy. Reach friends and family on their Alexa-enabled device, the Alexa app, or their home and mobile numbers in the US, Canada and Mexico – for free. Once you verify your phone number and sync your contacts in the Alexa app, just ask Alexa to call any of your contacts by name to make hands-free calls while you multitask. You can also make video calls to friends and family between any Echo Show, Echo Spot, or the Alexa app.

When you place calls, your contacts will see your registered number as your caller ID. You can change this setting in the Alexa app. Emergency services such as 911 are not supported. [View frequently asked questions about Alexa Calling.](#)

You can receive calls from other Alexa-enabled devices or the Alexa app. If someone is calling, Alexa will announce the incoming caller and a green light ring will appear on your Echo device. You can ask Alexa to answer or ignore the call.

Try personalizing your experience by teaching Alexa to recognize your voice. Simply say “Alexa, learn my voice” so she can recognize you, place calls to only your contacts, and play only your messages.

Just ask:
“Alexa, call Mom.”
“Alexa, answer.”
“Alexa, hang up.”

With Echo Connect, you can connect your home phone to your Alexa-enabled device to make and receive calls from anyone, using just your voice. With an Echo Connect, you can also call premium rate, emergency, and international numbers (carrier charges apply).

See, e.g.,

https://www.amazon.com/b/ref=aeg_lp_comm_d/ref=s9_acss_bw_cg_aegflp_1b1_w?node=17934681011&pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-6&pf_rd_r=JCEXPV9CFAK9TVXXVEKA&pf_rd_t=101&pf_rd_p=02147624-e148-4901-b449-773097cfa62e&pf_rd_i=17934672011 .

23. The Amazon Accused Products in conjunction with Alexa include a voice enabled device operatively connected to their included computer, and that voice enabled device is configured to receive speech commands from users.

24. For example, Amazon Echo in conjunction with Alexa is a voice enabled device because the Amazon Echo includes a microphone:



See, e.g., https://www.amazon.com/dp/B07456BG8N?tag=googhydr-20&hvadid=333263006615&hvpos=1t1&hvnetw=g&hvrnd=17718345068411276924&hvpone=&hvptwo=&hvmmt=e&hvdev=c&hvdvmdl=&hvlocint=&hvlocphy=1018127&hvtargid=kwd-295921616770&ref=pd_sl_2g7cb1h5ze_e#tech.



See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=%20echo&qid=1562871943&s=gateway&sr=8-2

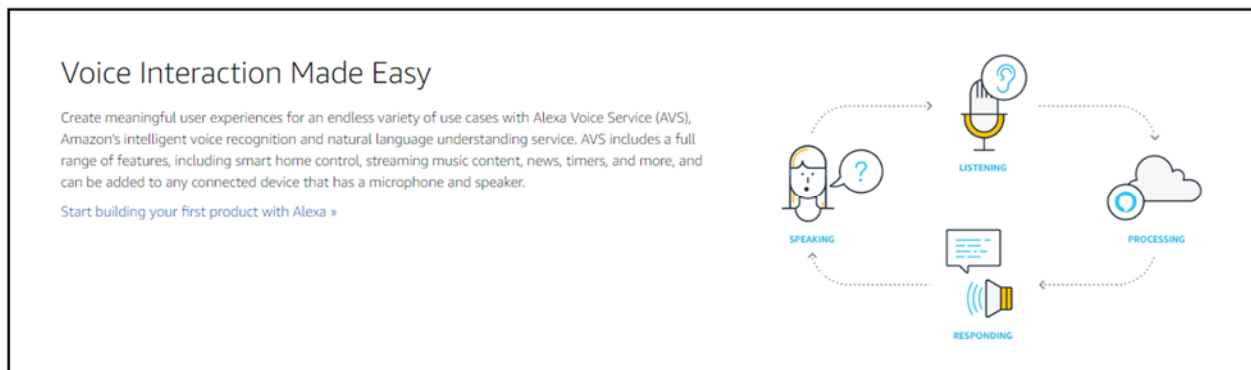
25. Further, the microphone operatively connected to the Amazon Echo in conjunction with Alexa is configured to receive speech commands from users.

But really, what exactly is Alexa? When you ask Alexa a question, what you're doing is communicating with a cloud-based service. Amazon has designed the Alexa Voice Service (AVS) to mimic real conversations, but you're actually using intuitive voice commands to get this service to perform specific tasks. "Alexa" is simply the "wake word" that alerts the service to start listening to your voice. For most devices, you just have to say it to get a response.

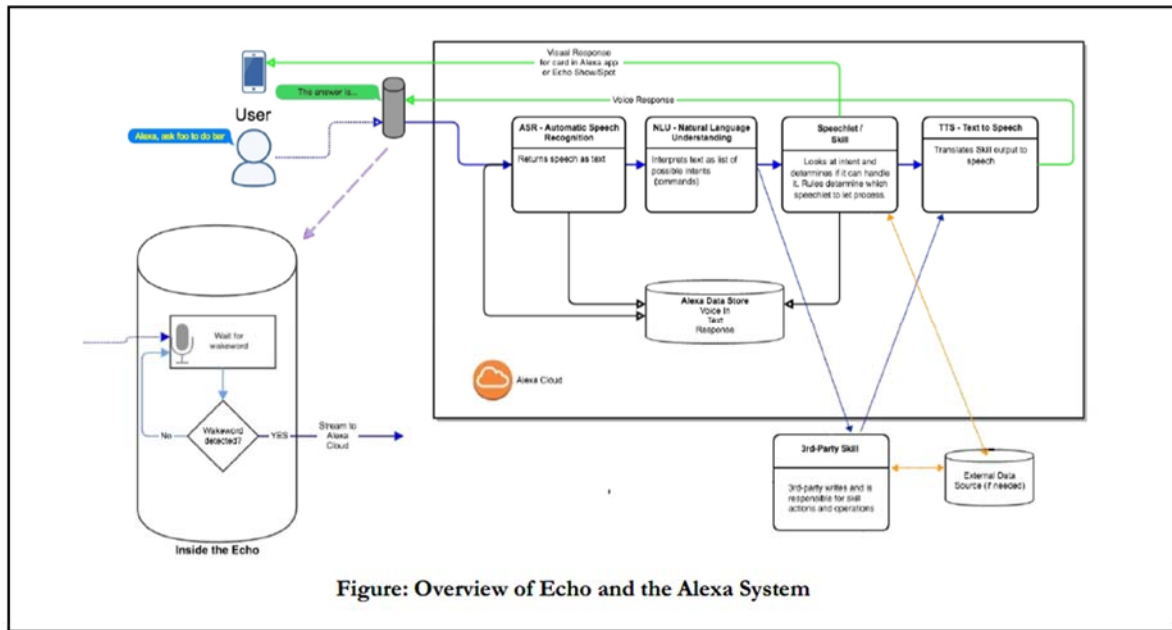
Here's how Amazon describes the [Alexa Voice Service](#) on its developer page:

"The Alexa Voice Service (AVS) is Amazon's intelligent voice recognition and natural language understanding service that allows you to voice-enable any connected device that has a microphone and speaker."

What is Alexa, and what can Amazon's virtual assistant do for you? (Feb. 16, 2019), available at <https://www.digitaltrends.com/home/what-is-amazons-alexa-and-what-can-it-do/>.



See, e.g., <https://developer.amazon.com/alexa-voice-service/what-is-avs?linkCode=w61&imprToken=r0iiuJ6M7dIbzmX940rclw&slotNum=1>



See, e.g., Amazon, White Paper, Alexa Privacy and Data Handling Overview (July 20, 2018) at 1.

ASR and NLU

Alexa converts spoken words to text using automatic speech recognition (ASR), deduces the speaker's meaning using natural language understanding (NLU), and provides the underlying customer intent to your skill.

See, e.g., Alexa Skills Set, Amazon Alexa, <https://developer.amazon.com/en-US/alexa/alexa-skills-kit>.

26. The Amazon Echo device in conjunction with Alexa retrieves information from pre-selected websites that have already been crawled.

The New York Times reports that Microsoft and Amazon partnered in May last year, after Amazon CEO Jeff Bezos raised the idea with Microsoft CEO Satya Nadella at Microsoft's CEO summit. Amazon's push to partner more closely with Microsoft makes sense, as the pair are both trying to fend off Google's own assistant and Microsoft already helps power Alexa queries through its Bing search engine.

See, e.g., <https://www.theverge.com/2017/8/30/16224876/microsoft-amazon-cortana-alexa-partnership>

How Bing delivers search results

As an online search engine, the primary objective of Bing is to connect users with the most relevant search results from the web—providing easy access to quality content produced by web publishers. To do this, Bing automatically crawls the web to build an index of new and updated pages (or URLs) to display as a set of search results relevant to a user-initiated search or action. The content of these pages may reference or contain various online resources and content including websites, images, videos, documents, and other items. Search results are generated by using computer algorithms to match the search terms you enter with results in our index. In general, we try to provide as comprehensive and as useful a collection of displayed search results as we can. We design—and continually improve—our algorithms to provide the most relevant and useful results.

See, e.g., <http://help.bing.microsoft.com/#apex/18/en-US/10016/0>

Bingbot is the name of the crawler used by Bing to crawl or "spider" the web. It is Bingbot's job to find new and updated pages on websites across the Internet, so that they can be processed for indexation. When crawling a website, Bingbot looks at robots.txt for special instructions from the website owner. Bingbot honors robots.txt directives, including the *crawl-delay* setting, and, in the absence of a crawl-delay, respects the input from Webmasters in the Crawl Control Feature.

See, e.g., <https://www.bing.com/webmaster/help/how-to-report-an-issue-with-bingbot-25c19802>

Meet our crawlers

Bing operates five main crawlers today:

CRAWLER	ROLE OF THIS PARTICULAR CRAWLER
Bingbot	Bingbot is our standard crawler and handles most of our crawling needs each day. Bingbot uses a couple of different user agent strings which include several mobile variants with which we crawl the mobile web (see here for details on the latter).
MSNBot	MSNBot used to be our standard crawler before the advent of Bingbot and still handles some of our crawling duties.
MSNBot-Media	MSNBot-Media is our crawler for images and video.
AdlidxBot	AdlidxBot is the crawler used by Bing Ads. AdlidxBot is responsible for crawling ads and following through to websites from those ads for quality control purposes. Same as Bingbot, AdlidxBot has both desktop and mobile variants.
BingPreview	BingPreview is used to generate page snapshots. You can find more details about Bing Preview here . Note that BingPreview also has "desktop" and "mobile" variants.

See, e.g., <https://www.bing.com/webmaster/help/which-crawlers-does-bing-use-8c184ec0>

Bing's crawler, Bingbot is a key component of the Bing platform. Bingbot's main function is to:

- Download webpages to get the latest content and discover new links from existing known links.
- Verify that web documents already indexed are still valid, not dead links, helping to keep the Bing index comprehensive and fresh to answer customer queries with relevant results.

See, e.g., <https://www.searchenginejournal.com/why-how-bing-plans-to-improve-its-crawler-bingbot/291979/#close>

For example, Bing customers searching for the latest space rocket launch can search and find new relevant webpages only seconds after this rocket launch. To be able to link to these new URLs, we have to discover, select, crawl, process, and then index them.

To discover these new URLs, we have to crawl regularly existing known URLs to monitor for new URLs.

Once discovered, we have to crawl to get the content for these new URLs.

We have to continue crawling these newly indexed URLs regularly to check for potential content changes and verify that these webpages are still valid, not dead links.

In other words, we crawl each URL in our system more than once.

See id.

What Is an Alexa Built-in Product?

Alexa built-in is a category of devices created with the Alexa Voice Service (AVS) that have a microphone and speaker. You can talk to these products directly with the wake word "Alexa," and receive voice responses and content instantly. Alexa built-in products work with Alexa skills and Alexa-compatible smart home devices, bringing familiar capabilities from the Amazon Echo family of devices to a range of new form factors and use cases developed by leading brands.

Why Alexa Voice Service?

The Alexa Voice Service enables you to access cloud-based Alexa capabilities with the support of AVS APIs, hardware kits, software tools, and documentation. We simplify building voice-forward devices with Alexa built-in by handling complex speech recognition and natural language understanding in the cloud, reducing your development costs and accelerating your time to market. Best of all, regular Alexa updates bring new features to your device and add support for a growing assortment of compatible smart home devices. Build with AVS, and become part of the Alexa family.



See, e.g., <https://developer.amazon.com/alexa-voice-service>.

27. Each of the Amazon Accused Products includes at least one speaker-independent speech recognition device, which is operatively connected to the computer and to the voice enabled device. For example, the Amazon Echo allows a user to talk through the device to send commands to the cloud.

Why Build Alexa Skills?

Alexa is Amazon's cloud-based voice service and the brain behind tens of millions of devices including the Echo family of devices, FireTV, Fire Tablet, and third-party devices with Alexa built-in. You can build voice experiences, or skills, that make everyday tasks faster, easier, and more delightful for customers.

Tens of thousands of developers have built skills using the Alexa Skills Kit (ASK), a collection of self-service APIs, tools, documentation, and code samples. With ASK, anyone can leverage Amazon's knowledge in voice design to build quickly and easily. Start building today to reimagine your customer experience for voice and reach customers where they are.



See, e.g., <https://developer.amazon.com/en-US/alexa/alexa-skills-kit>.

Always getting smarter

Alexa is always getting smarter—the more you use Echo, the more Alexa adapts to your speech patterns, vocabulary, and personal preferences. And because Echo is always connected, updates are delivered automatically.

Just in the last few months we've added Alexa calling and messaging, multi-room music, voice profiles, and reminders, along with skills from third-party developers. [Explore more things to try with Alexa.](#)

"Alexa, remind me to call Mom on Saturday at 2 p.m."

"Alexa, what are the hours for Whole Foods?"

See, e.g., https://www.amazon.com/dp/B07456BG8N?tag=googhydr-20&hvadid=333263006615&hvpos=1t1&hvnw=g&hvrnd=17718345068411276924&hvpone=&hvptwo=&hvqmt=e&hvdev=c&hvdvcmld=&hvlocint=&hvlocphy=1018127&hvtargid=kwd-295921616770&ref=pd_sl_2g7cb1h5ze_e#tech (annotation added).

Amazon Echo is a hands-free speaker you control with your voice. Echo connects to the Alexa Voice Service to play music, ask questions, make calls, send and receive messages, provide information, news, sports scores, weather, and more—instantly. All you have to do is ask.

Echo has an enhanced speaker that now features Dolby processing for improved immersive sound. It has seven microphones and beamforming technology so it can hear you from across the room—even while music is playing. When you want to use Echo, just say the wake word "Alexa" and Echo responds instantly.

"Alexa, what's the weather tomorrow?"

"Alexa, set a timer for 10 minutes."

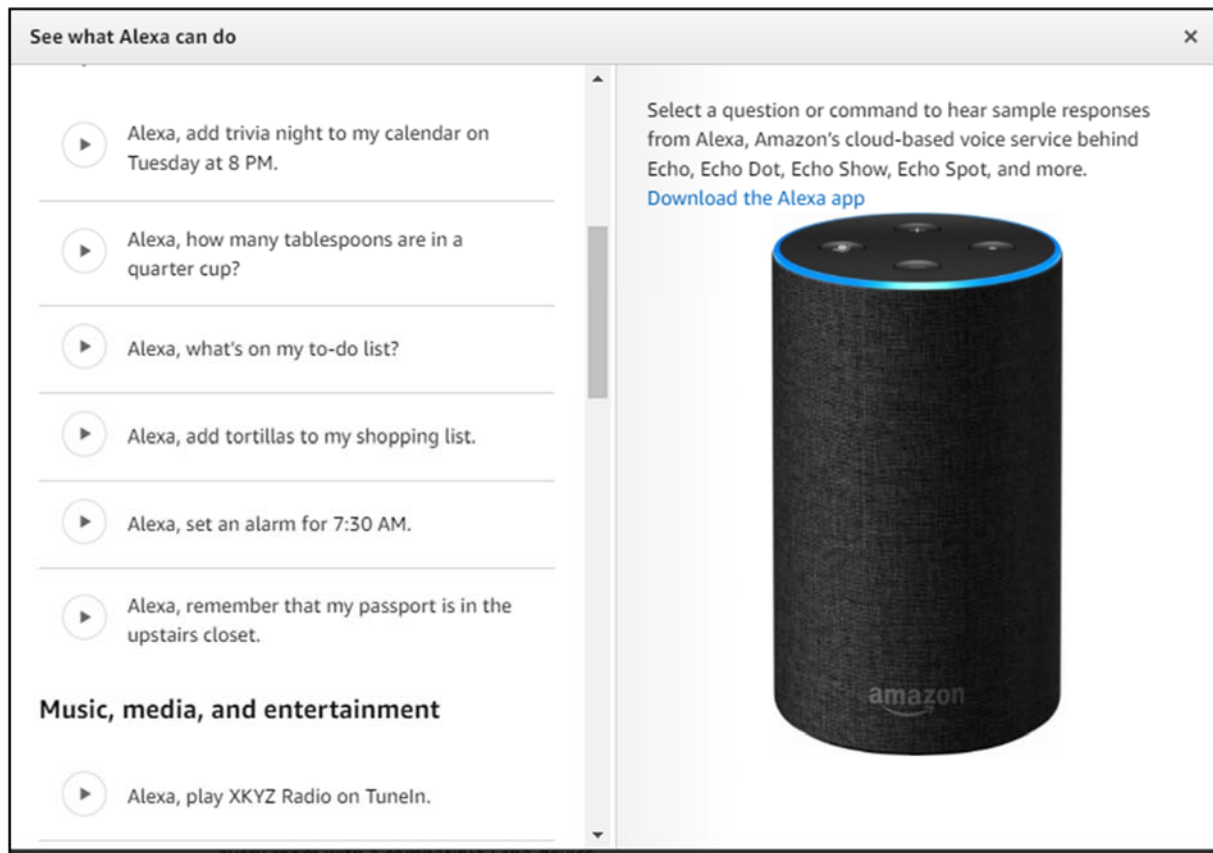
"Alexa, what's my commute?"

"Alexa, reorder paper towels."

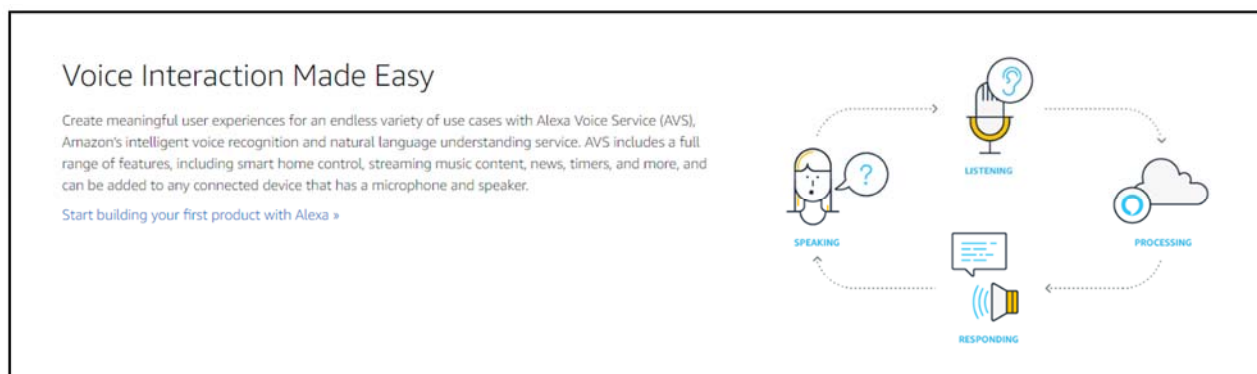
"Alexa, what's on my calendar today?"

"Alexa, play classical music for studying."

See, e.g., *id.* (annotation added)




See, e.g., https://www.amazon.com/dp/B07456BG8N?tag=googhydr-20&hvadid=333263006615&hvpos=1t1&hvnetw=g&hvrnd=17718345068411276924&hvpone=&hvptwo=&hvmqmt=e&hvdev=c&hvdvmdl=&hvlocint=&hvlocphy=1018127&hvtargid=kwd-295921616770&ref=pd_sl_2g7cb1h5ze_e.



See, e.g., <https://developer.amazon.com/alexa-voice-service/what-is-avs?linkCode=w61&imprToken=r0iiuJ6M7dIbzmX940rclw&slotNum=1>

Be together more



Calling

Making calls with Alexa is easy. Reach friends and family on their Alexa-enabled device, the Alexa app, or their home and mobile numbers in the US, Canada and Mexico – for free. Once you verify your phone number and sync your contacts in the Alexa app, just ask Alexa to call any of your contacts by name to make hands-free calls while you multitask. You can also make video calls to friends and family between any Echo Show, Echo Spot, or the Alexa app.

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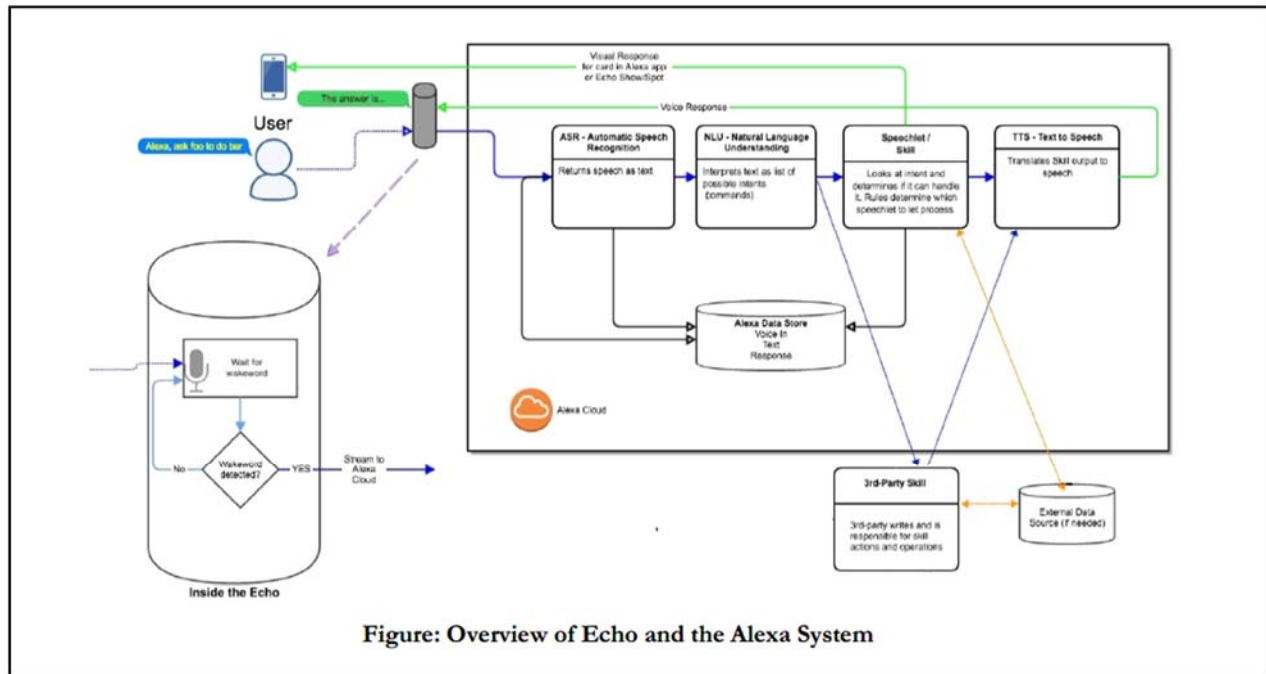
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With Echo Connect, you can connect your home phone to your Alexa-enabled device to make and receive calls from anyone, using just your voice. With an Echo Connect, you can also call premium rate, emergency, and international numbers (carrier charges apply).

See, e.g., https://www.amazon.com/b/ref=aeg_lp_comm_d/ref=s9_acss_bw_cg_aegflp_1b1_w?node=17934681011&pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-6&pf_rd_r=JCEXPV9CF AK9TVXXVEKA&pf_rd_t=101&pf_rd_p=02147624-e148-4901-b449-773097cfa62e&pf_rd_i=17934672011.

28. Each of the Amazon Accused Products includes at least one speech synthesis device, said speech synthesis device operatively connected to its computer and to its voice enabled device. For example, the Amazon Echo in conjunction with Alexa can handle voice commands on the device itself or with help from the cloud.



See, e.g., Amazon, White Paper, Alexa Privacy and Data Handling Overview (July 20, 2018) at 1.

ASR and NLU

Alexa converts spoken words to text using automatic speech recognition (ASR), deduces the speaker's meaning using natural language understanding (NLU), and provides the underlying customer intent to your skill.

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Tens of thousands of developers have built skills using the Alexa Skills Kit (ASK), a collection of self-service APIs, tools, documentation, and code samples. With ASK, anyone can leverage Amazon's knowledge in voice design to build quickly and easily. Start building today to reimagine your customer experience for voice and reach customers where they are.



See, e.g., <https://developer.amazon.com/en-US/alexa/alexa-skills-kit>.

What Is an Alexa Built-in Product?

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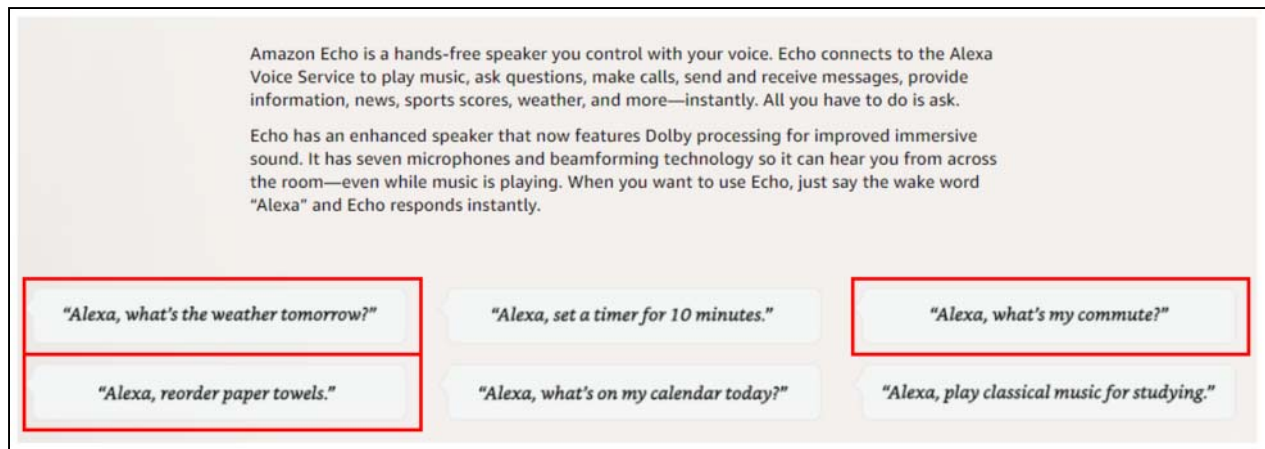
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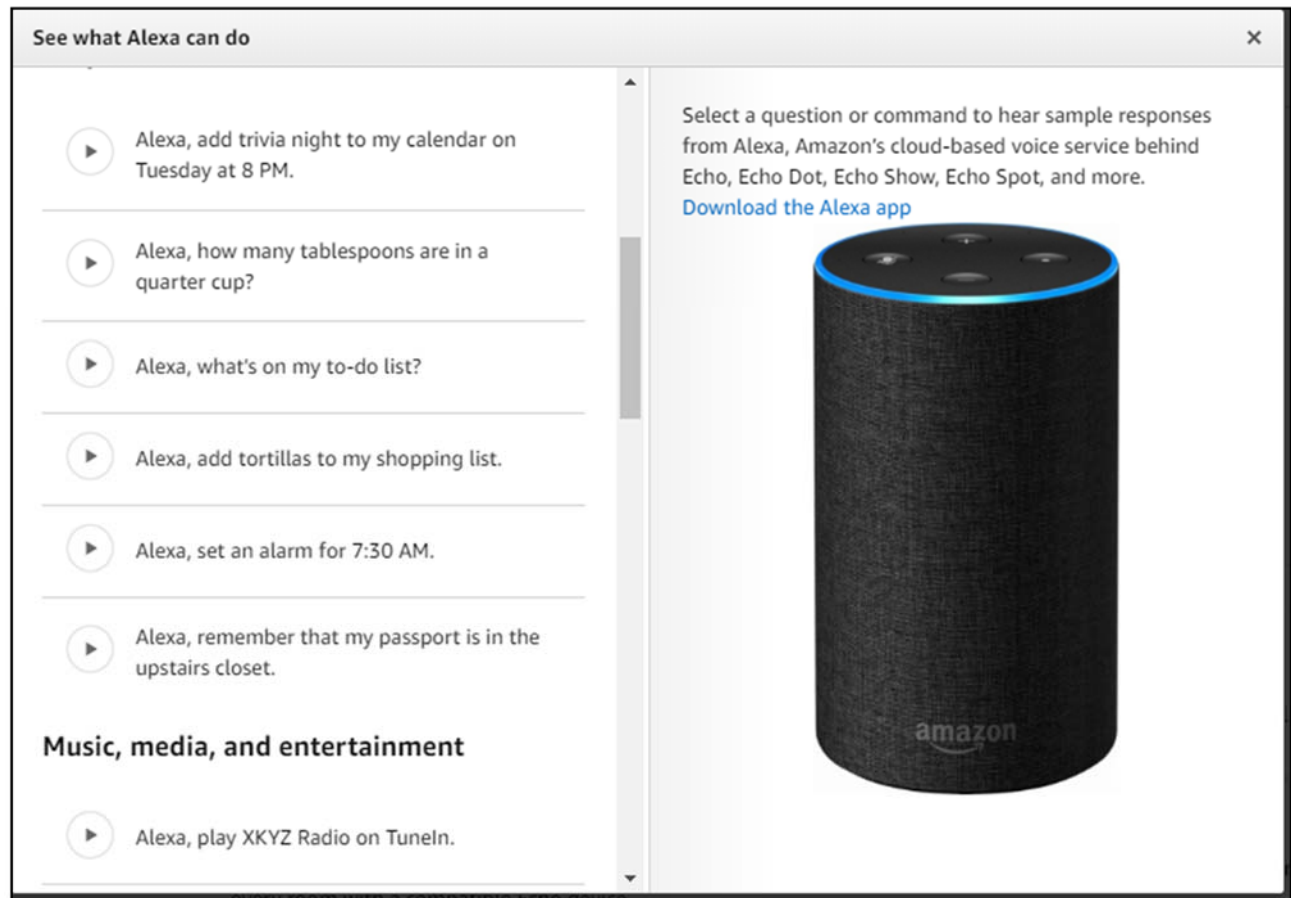
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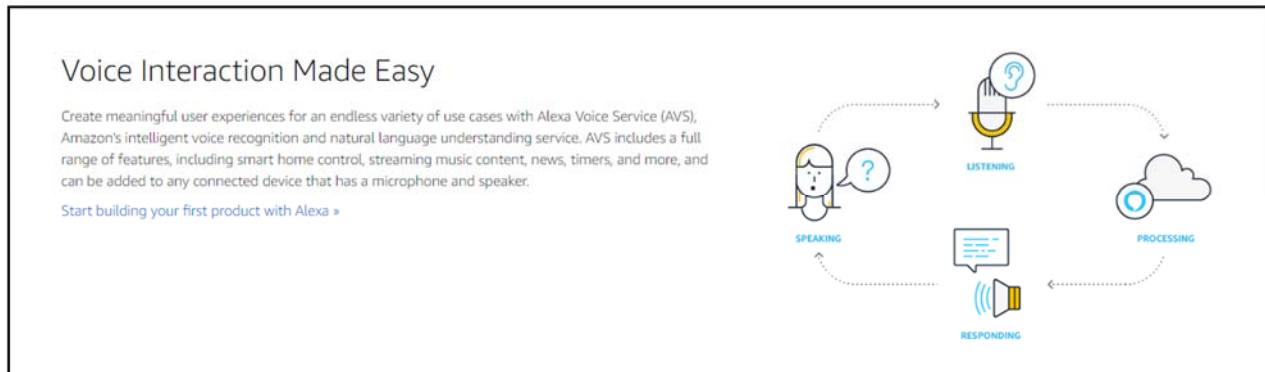
See, e.g., https://www.amazon.com/dp/B07456BG8N?tag=googhydr-20&hvadid=333263006615&hvpos=1t1&hvnetw=g&hvrnd=17718345068411276924&hvpone=&hvptwo=&hvmmt=e&hvdev=c&hvdvcmld=&hvlocint=&hvlocphy=1018127&hvtargid=kwd-295921616770&ref=pd_sl_2g7cb1h5ze_e#tech (annotation added).



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See, e.g., <https://developer.amazon.com/alexa-voice-service/what-is-avs?linkCode=w6l&imprToken=r0iiuJ6M7dIbzmX940rclw&slotNum=1>

Be together more

Calling

Making calls with Alexa is easy. Reach friends and family on their Alexa-enabled device, the Alexa app, or their home and mobile numbers in the US, Canada and Mexico – for free. Once you verify your phone number and sync your contacts in the Alexa app, just ask Alexa to call any of your contacts by name to make hands-free calls while you multitask. You can also make video calls to friends and family between any Echo Show, Echo Spot, or the Alexa app.

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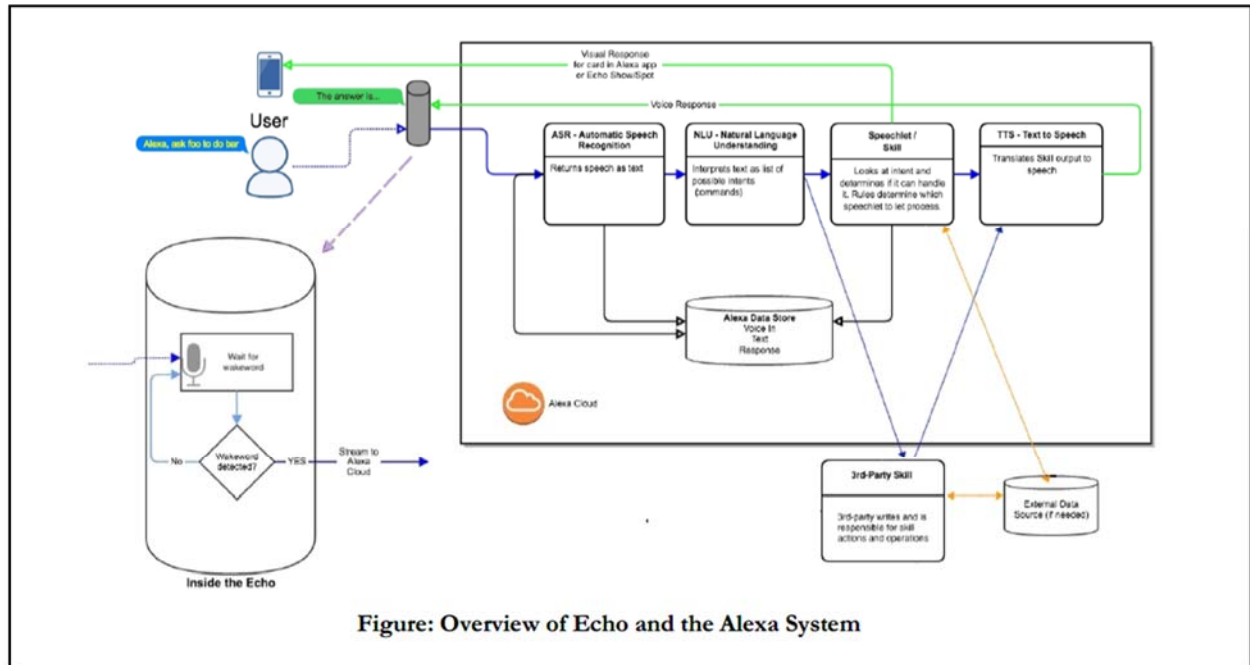
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29. The Amazon Accused Products include at least one instruction set for identifying said information to be retrieved, and those instruction sets being associated with the computer.

30. For example, because the Amazon Echo in conjunction with Alexa can handle voice commands on the device itself or with help from the cloud, there is an instruction set for identifying said information to be retrieved, said instruction set being associated with said computer.



See, e.g., Amazon, White Paper, Alexa Privacy and Data Handling Overview (July 20, 2018) at 1.

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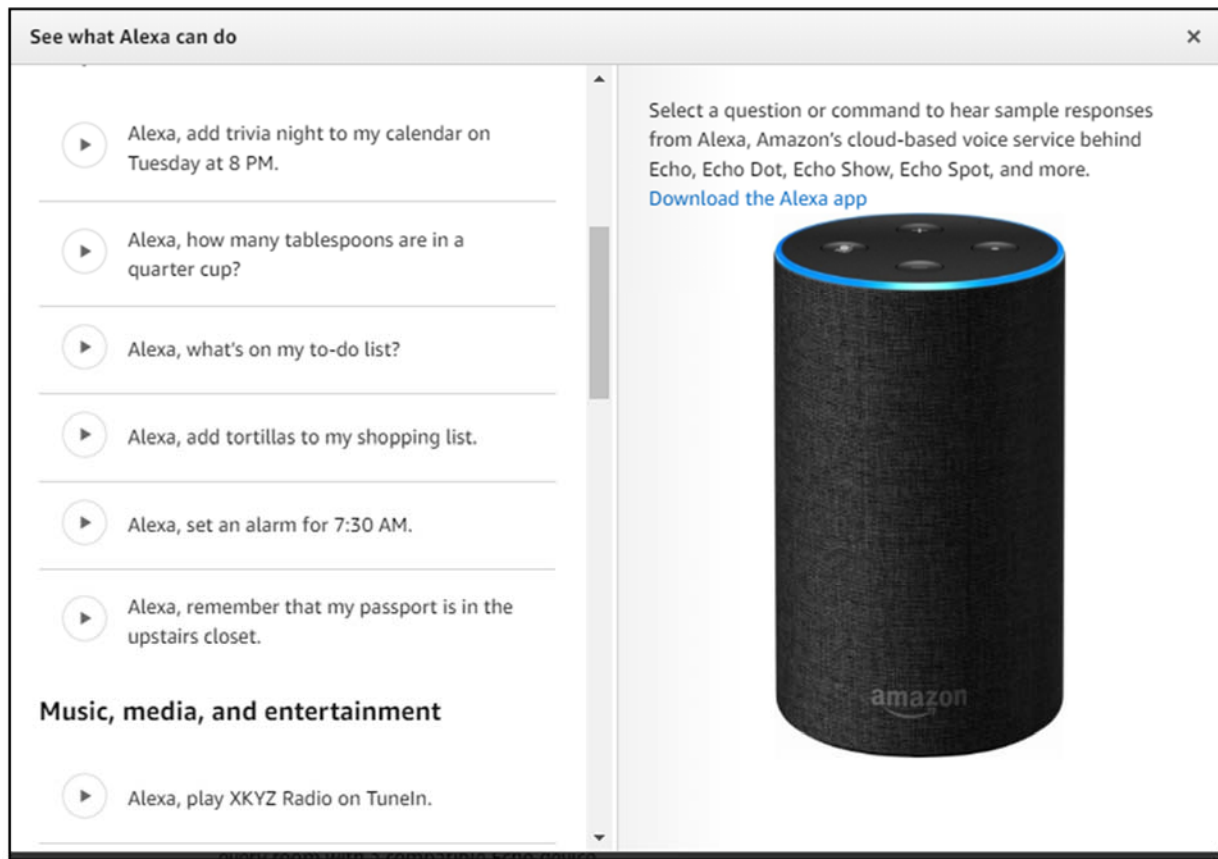
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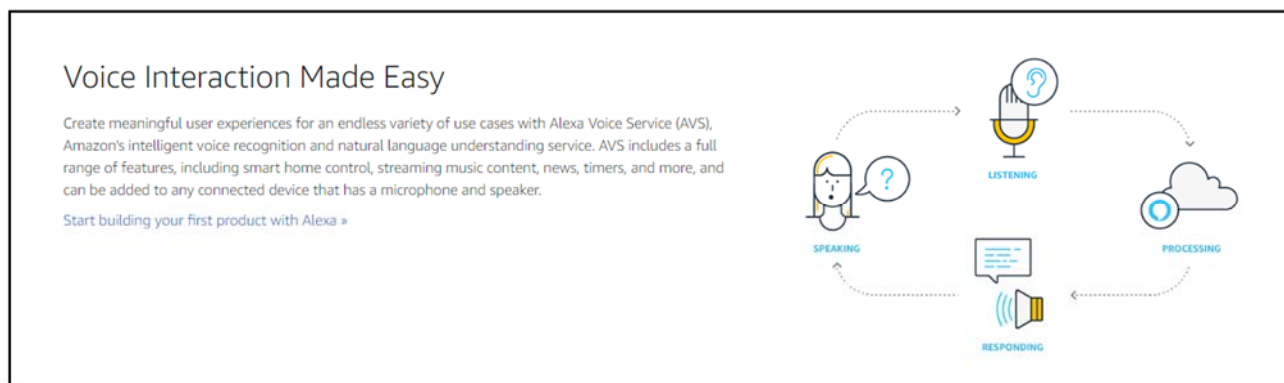
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31. The aforementioned instruction set for each of the Amazon Accused Products comprises a plurality of pre-selected web site addresses, each said web site address identifying a web site containing said information to be retrieved. For example, the Amazon Echo retrieves information from pre-selected websites that have already been crawled.

The New York Times reports that Microsoft and Amazon partnered in May last year, after Amazon CEO Jeff Bezos raised the idea with Microsoft CEO Satya Nadella at Microsoft's CEO summit. Amazon's push to partner more closely with Microsoft makes sense, as the pair are both trying to fend off Google's own assistant and Microsoft already helps power Alexa queries through its Bing search engine.

See, e.g., <https://www.theverge.com/2017/8/30/16224876/microsoft-amazon-cortana-alexa-partnership>

How Bing delivers search results

As an online search engine, the primary objective of Bing is to connect users with the most relevant search results from the web—providing easy access to quality content produced by web publishers. To do this, Bing automatically crawls the web to build an index of new and updated pages (or URLs) to display as a set of search results relevant to a user-initiated search or action. The content of these pages may reference or contain various online resources and content including websites, images, videos, documents, and other items. Search results are generated by using computer algorithms to match the search terms you enter with results in our index. In general, we try to provide as comprehensive and as useful a collection of displayed search results as we can. We design—and continually improve—our algorithms to provide the most relevant and useful results.

See, e.g., <http://help.bing.microsoft.com/#apex/18/en-US/10016/0>

Bingbot is the name of the crawler used by Bing to crawl or “spider” the web. It is Bingbot's job to find new and updated pages on websites across the Internet, so that they can be processed for indexation. When crawling a website, Bingbot looks at robots.txt for special instructions from the website owner. Bingbot honors robots.txt directives, including the *crawl-delay* setting, and, in the absence of a *crawl-delay*, respects the input from Webmasters in the Crawl Control Feature.

See, e.g., <https://www.bing.com/webmaster/help/how-to-report-an-issue-with-bingbot-25c19802>

Meet our crawlers

Bing operates five main crawlers today:

CRAWLER	ROLE OF THIS PARTICULAR CRAWLER
Bingbot	Bingbot is our standard crawler and handles most of our crawling needs each day. Bingbot uses a couple of different user agent strings which include several mobile variants with which we crawl the mobile web (see here for details on the latter).
MSNBot	MSNBot used to be our standard crawler before the advent of Bingbot and still handles some of our crawling duties.
MSNBot-Media	MSNBot-Media is our crawler for images and video.
AdlidxBot	AdlidxBot is the crawler used by Bing Ads. AdlidxBot is responsible for crawling ads and following through to websites from those ads for quality control purposes. Same as Bingbot, AdlidxBot has both desktop and mobile variants.
BingPreview	BingPreview is used to generate page snapshots. You can find more details about Bing Preview here . Note that BingPreview also has "desktop" and "mobile" variants.

See, e.g., <https://www.bing.com/webmaster/help/which-crawlers-does-bing-use-8c184ec0>

Bing's crawler, Bingbot is a key component of the Bing platform. Bingbot's main function is to:

- Download webpages to get the latest content and discover new links from existing known links.
- Verify that web documents already indexed are still valid, not dead links, helping to keep the Bing index comprehensive and fresh to answer customer queries with relevant results.

See, e.g., <https://www.searchenginejournal.com/why-how-bing-plans-to-improve-its-crawler-bingbot/291979/#close>

For example, Bing customers searching for the latest space rocket launch can search and find new relevant webpages only seconds after this rocket launch. To be able to link to these new URLs, we have to discover, select, crawl, process, and then index them.

To discover these new URLs, we have to crawl regularly existing known URLs to monitor for new URLs.

Once discovered, we have to crawl to get the content for these new URLs.

We have to continue crawling these newly indexed URLs regularly to check for potential content changes and verify that these webpages are still valid, not dead links.

In other words, we crawl each URL in our system more than once.

See id.

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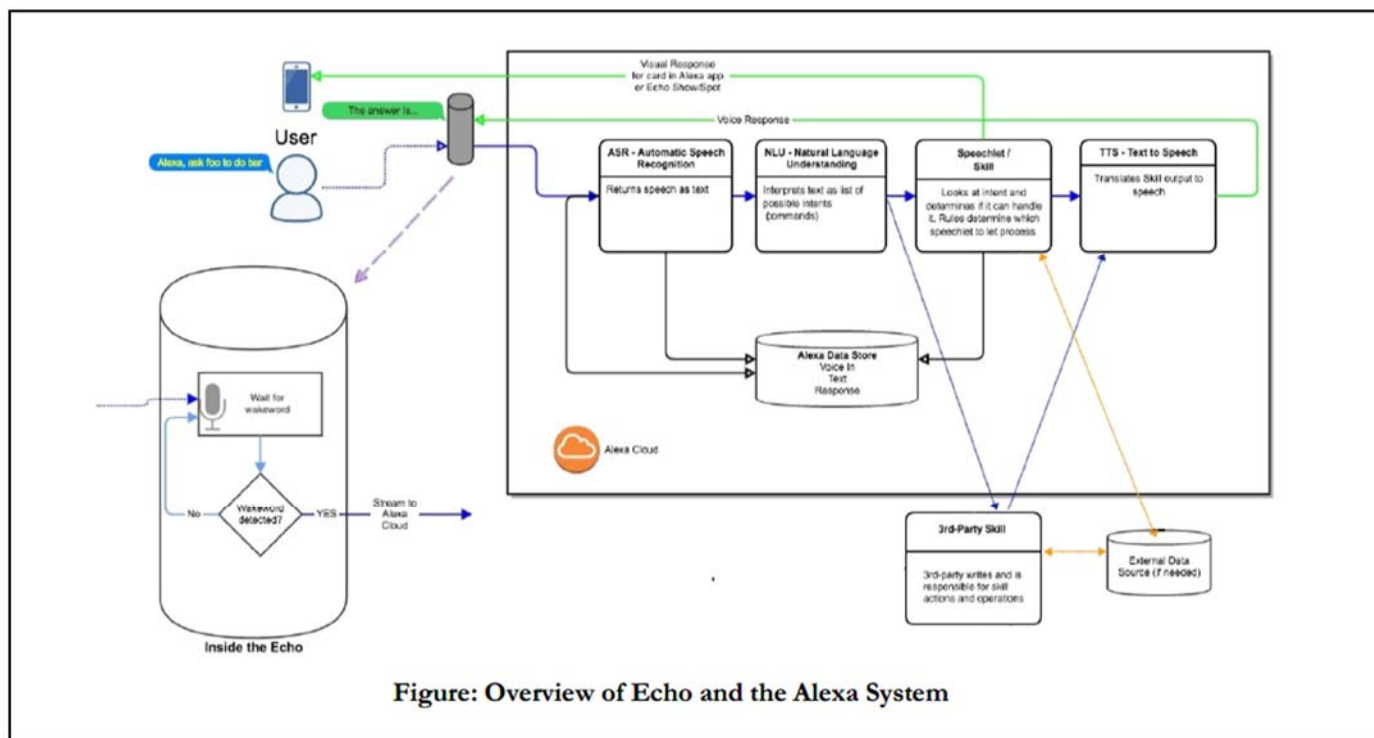


See, e.g., <https://developer.amazon.com/alexa-voice-service>.

32. Microsoft / Bing uses technology to crawl the web to index web sites with information to respond to a search request. The indexed websites are identified by web site addresses. These indexed websites are “a plurality of pre-selected web site addresses,” and each such website “identif[ies] a web site containing said information to be retrieved.”

33. The Amazon Accused Products include at least one recognition grammar associated with said computer, each said recognition grammar corresponding to each said instruction set and corresponding to a speech command.

34. For example, on information and belief, the Amazon Echo, in connection with Alexa, utilizes an artificial neural network, which is a speech recognition grammar, to process voice commands. On information and belief, Amazon provides the capability for a user to define recognition grammars via skills. The Amazon Echo then also utilizes these user-defined speech recognition grammars when executing the skills triggered by a voice command. The Amazon Echo can handle voice commands on the device itself when offline, indicating that at least one recognition grammar corresponding to each said instruction set and corresponding to a speech command is on the device itself. The Amazon Echo can also handle voice commands with help from the cloud.



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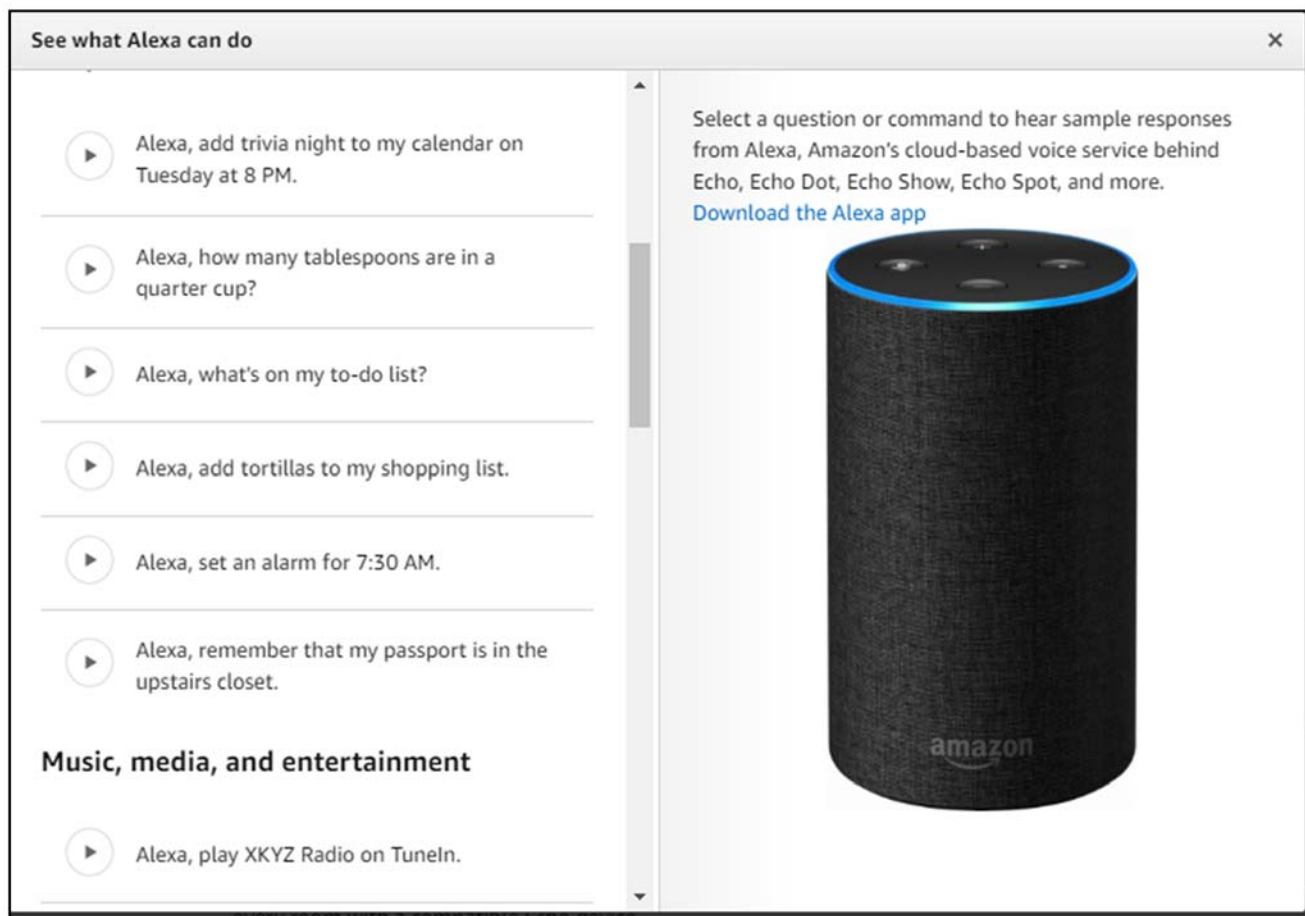
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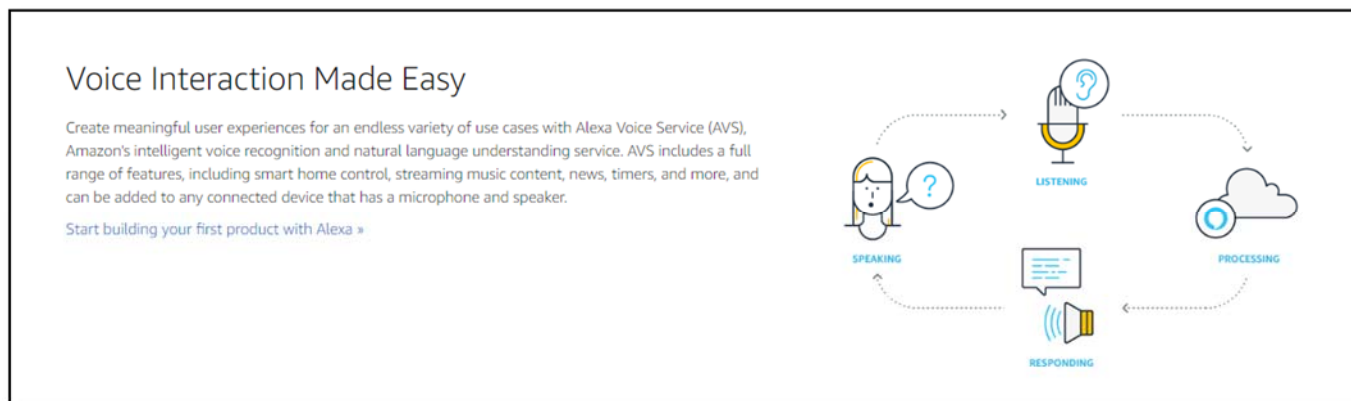
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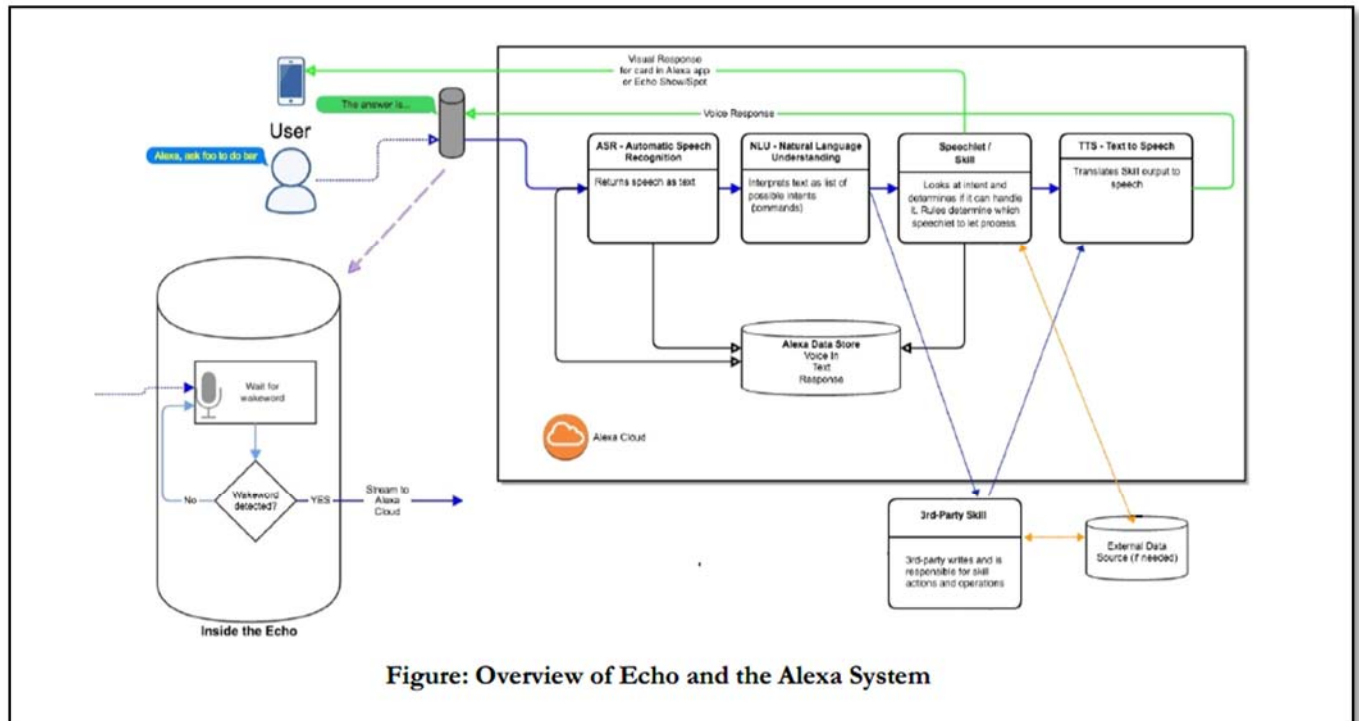
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35. The speech commands of the Amazon Accused Products comprise information requests selectable by the user.

36. For example, the Amazon Echo is a system for retrieving information from pre-selected web sites by uttering speech commands into a voice enabled device. In marketing materials, Amazon indicates that the Amazon Echo will make tasks easier by responding to speech commands that comprise information requests from a user with retrieved information in an audio form.



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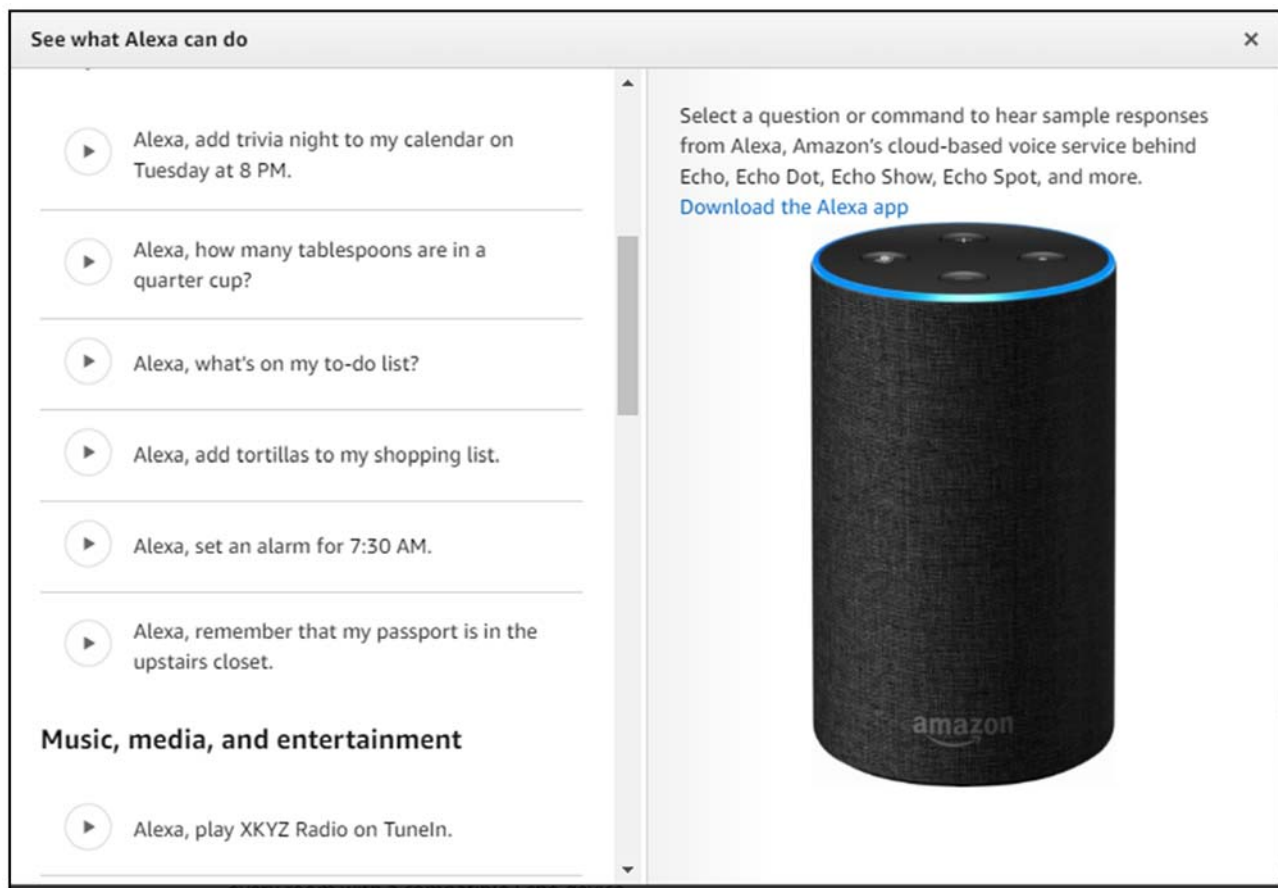
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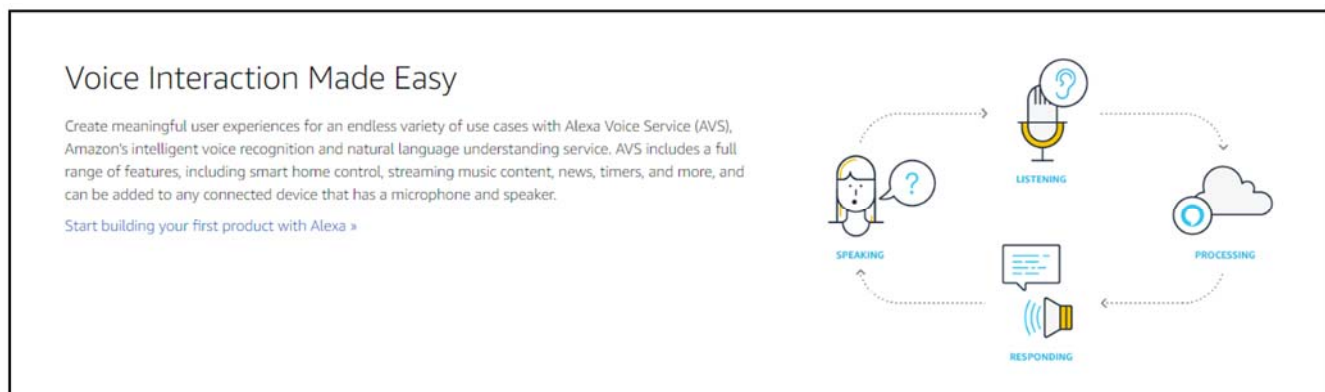
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See, e.g., <https://developer.amazon.com/alexa-voice-service/what-is-avs?linkCode=w61&imprToken=r0iiuJ6M7dIbzmX940rclw&slotNum=1>

Be together more



Calling

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When you place calls, your contacts will see your registered number as your caller ID. You can change this setting in the Alexa app. Emergency services such as 911 are not supported. [View frequently asked questions about Alexa Calling.](#)

You can receive calls from other Alexa-enabled devices or the Alexa app. If someone is calling, Alexa will announce the incoming caller and a green light ring will appear on your Echo device. You can ask Alexa to answer or ignore the call.

Try personalizing your experience by teaching Alexa to recognize your voice. Simply say “Alexa, learn my voice” so she can recognize you, place calls to only your contacts, and play only your messages.

Just ask:
 “Alexa, call Mom.”
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With Echo Connect, you can connect your home phone to your Alexa-enabled device to make and receive calls from anyone, using just your voice. With an Echo Connect, you can also call premium rate, emergency, and international numbers (carrier charges apply).

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The New York Times reports that Microsoft and Amazon partnered in May last year, after Amazon CEO Jeff Bezos raised the idea with Microsoft CEO Satya Nadella at Microsoft's CEO summit. Amazon's push to partner more closely with Microsoft makes sense, as the pair are both trying to fend off Google's own assistant and Microsoft already helps power Alexa queries through its Bing search engine.

See, e.g., <https://www.theverge.com/2017/8/30/16224876/microsoft-amazon-cortana-alexa-partnership>

How Bing delivers search results

As an online search engine, the primary objective of Bing is to connect users with the most relevant search results from the web—providing easy access to quality content produced by web publishers. To do this, Bing automatically crawls the web to build an index of new and updated pages (or URLs) to display as a set of search results relevant to a user-initiated search or action. The content of these pages may reference or contain various online resources and content including websites, images, videos, documents, and other items. Search results are generated by using computer algorithms to match the search terms you enter with results in our index. In general, we try to provide as comprehensive and as useful a collection of displayed search results as we can. We design—and continually improve—our algorithms to provide the most relevant and useful results.

See, e.g., <http://help.bing.microsoft.com/#apex/18/en-US/10016/0>

Bingbot is the name of the crawler used by Bing to crawl or “spider” the web. It is Bingbot's job to find new and updated pages on websites across the Internet, so that they can be processed for indexation. When crawling a website, Bingbot looks at robots.txt for special instructions from the website owner. Bingbot honors robots.txt directives, including the *crawl-delay* setting, and, in the absence of a crawl-delay, respects the input from Webmasters in the Crawl Control Feature.

See, e.g., <https://www.bing.com/webmaster/help/how-to-report-an-issue-with-bingbot-25c19802>

Meet our crawlers

Bing operates five main crawlers today:

CRAWLER	ROLE OF THIS PARTICULAR CRAWLER
Bingbot	Bingbot is our standard crawler and handles most of our crawling needs each day. Bingbot uses a couple of different user agent strings which include several mobile variants with which we crawl the mobile web (see here for details on the latter).
MSNBot	MSNBot used to be our standard crawler before the advent of Bingbot and still handles some of our crawling duties.
MSNBot-Media	MSNBot-Media is our crawler for images and video.
AdldxBot	AdldxBot is the crawler used by Bing Ads. AdldxBot is responsible for crawling ads and following through to websites from those ads for quality control purposes. Same as Bingbot, AdldxBot has both desktop and mobile variants.
BingPreview	BingPreview is used to generate page snapshots. You can find more details about Bing Preview here . Note that BingPreview also has "desktop" and "mobile" variants.

See, e.g., <https://www.bing.com/webmaster/help/which-crawlers-does-bing-use-8c184ec0>

Bing's crawler, Bingbot is a key component of the Bing platform. Bingbot's main function is to:

- Download webpages to get the latest content and discover new links from existing known links.
- Verify that web documents already indexed are still valid, not dead links, helping to keep the Bing index comprehensive and fresh to answer customer queries with relevant results.

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For example, Bing customers searching for the latest space rocket launch can search and find new relevant webpages only seconds after this rocket launch. To be able to link to these new URLs, we have to discover, select, crawl, process, and then index them.

To discover these new URLs, we have to crawl regularly existing known URLs to monitor for new URLs.

Once discovered, we have to crawl to get the content for these new URLs.

We have to continue crawling these newly indexed URLs regularly to check for potential content changes and verify that these webpages are still valid, not dead links.

In other words, we crawl each URL in our system more than once.

See id.

What Is an Alexa Built-in Product?

Alexa built-in is a category of devices created with the Alexa Voice Service (AVS) that have a microphone and speaker. You can talk to these products directly with the wake word "Alexa," and receive voice responses and content instantly. Alexa built-in products work with Alexa skills and Alexa-compatible smart home devices, bringing familiar capabilities from the Amazon Echo family of devices to a range of new form factors and use cases developed by leading brands.

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The Alexa Voice Service enables you to access cloud-based Alexa capabilities with the support of AVS APIs, hardware kits, software tools, and documentation. We simplify building voice-forward devices with Alexa built-in by handling complex speech recognition and natural language understanding in the cloud, reducing your development costs and accelerating your time to market. Best of all, regular Alexa updates bring new features to your device and add support for a growing assortment of compatible smart home devices. Build with AVS, and become part of the Alexa family.



See, e.g., <https://developer.amazon.com/alexa-voice-service>.

37. The retrieve information is in audio form via the voice enabled device. For example, Amazon indicates that one can “use voice to set timers, add items to lists, and create calendar events and reminders. [One] can also check the news, weather or traffic.” On information and belief, the Amazon Echo device in conjunction with Alexa provides the retrieved information in an audio form via said voice enabled device.

Always ready to help

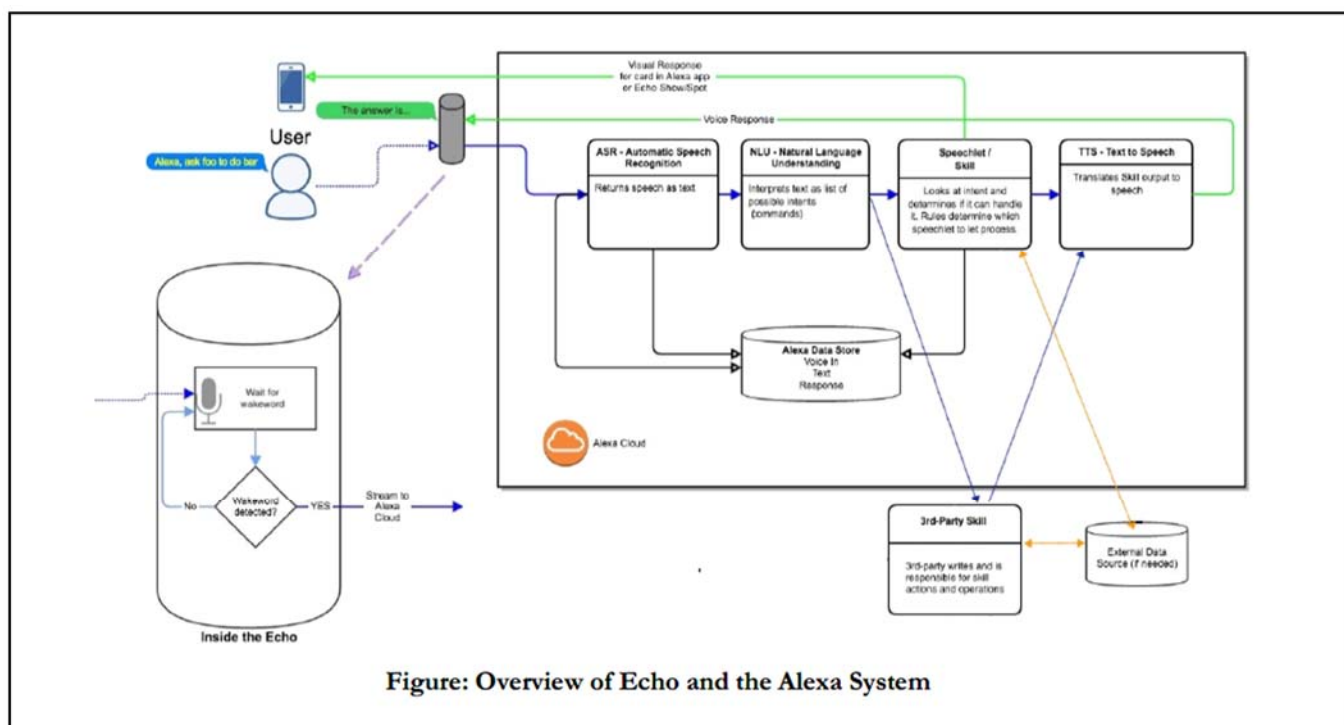
Make your life easier at home. Use your voice to set timers, add items to lists, and create calendar events and reminders. You can also check the news, weather, or traffic. Ask for sports scores, movie showtimes, restaurant hours, or information.



See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=echo&qid=1562871943&s=gateway&sr=8-2.

38. The speaker-independent speech recognition device of the Amazon Accused Products in conjunction with Alexa are configured to receive from users via the voice enabled device speech commands and to select the corresponding recognition grammar upon receiving the speech commands.

39. For example, because the Amazon Echo in conjunction with Alexa can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command.



See, e.g., Amazon, White Paper, Alexa Privacy and Data Handling Overview (July 20, 2018) at 1.

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Alexa converts spoken words to text using automatic speech recognition (ASR), deduces the speaker's meaning using natural language understanding (NLU), and provides the underlying customer intent to your skill.

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Tens of thousands of developers have built skills using the Alexa Skills Kit (ASK), a collection of self-service APIs, tools, documentation, and code samples. With ASK, anyone can leverage Amazon's knowledge in voice design to build quickly and easily. Start building today to reimagine your customer experience for voice and reach customers where they are.



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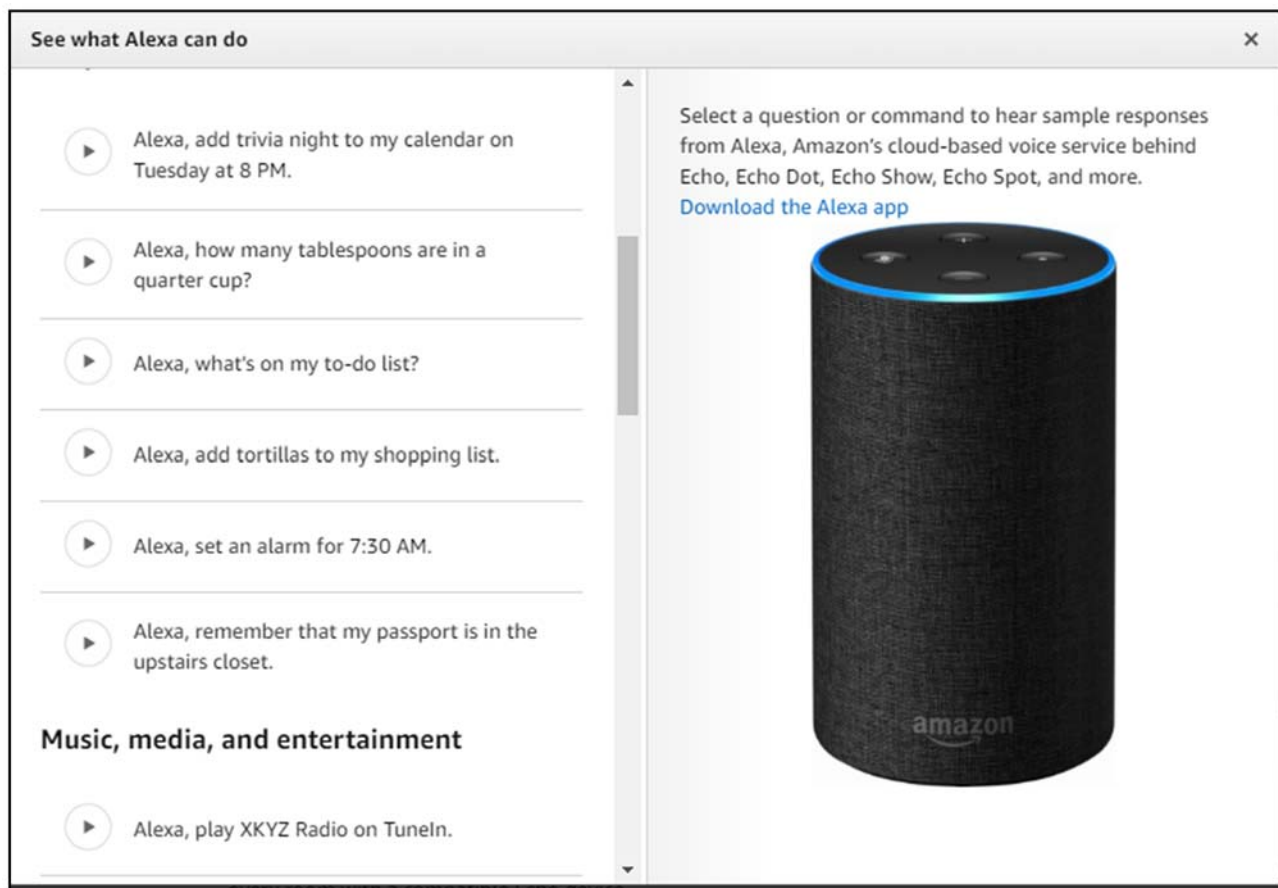
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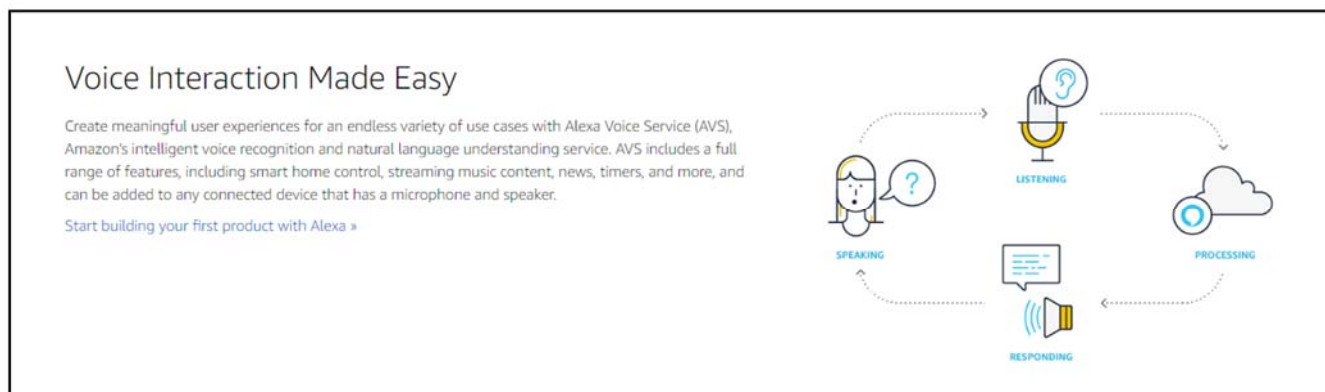
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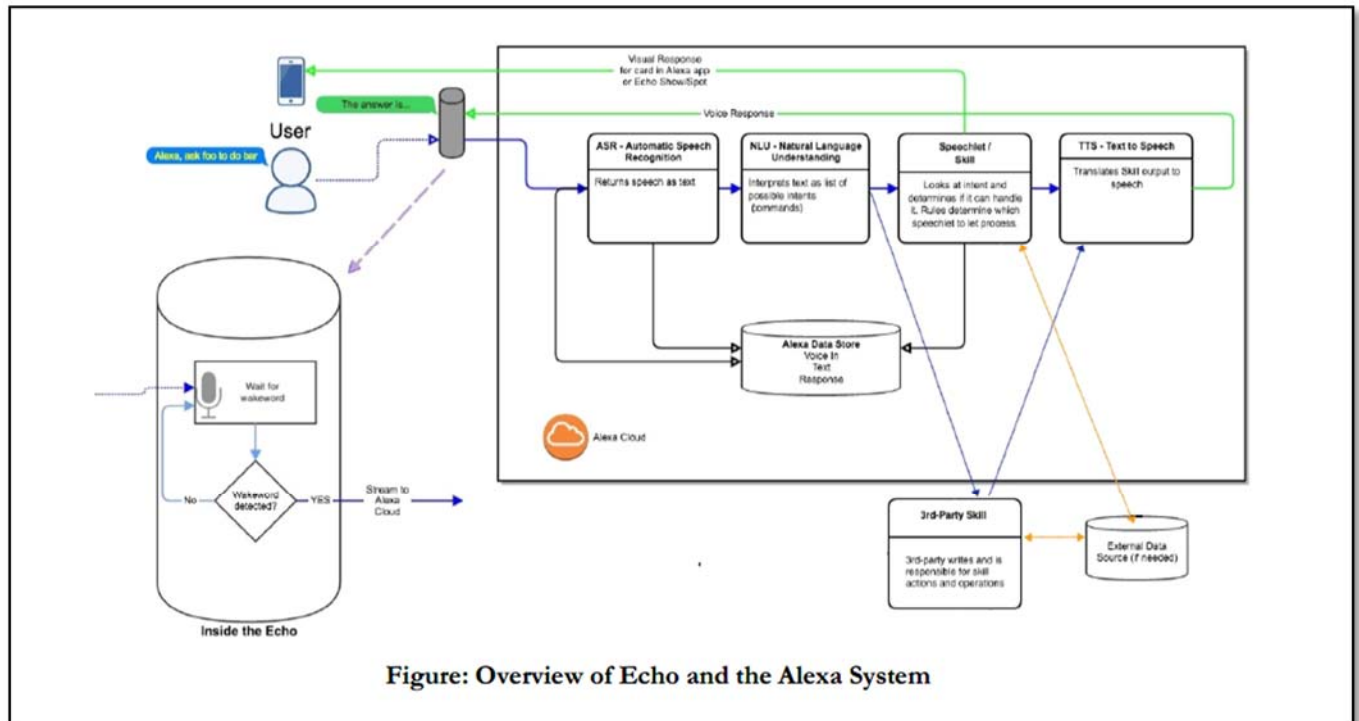
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40. The computer of the Amazon Accused Products in conjunction with Alexa is configured to retrieve said instruction set corresponding to said recognition grammar selected by said speaker-independent speech recognition device.

41. For example, because the Amazon Echo in conjunction with Alexa can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command.



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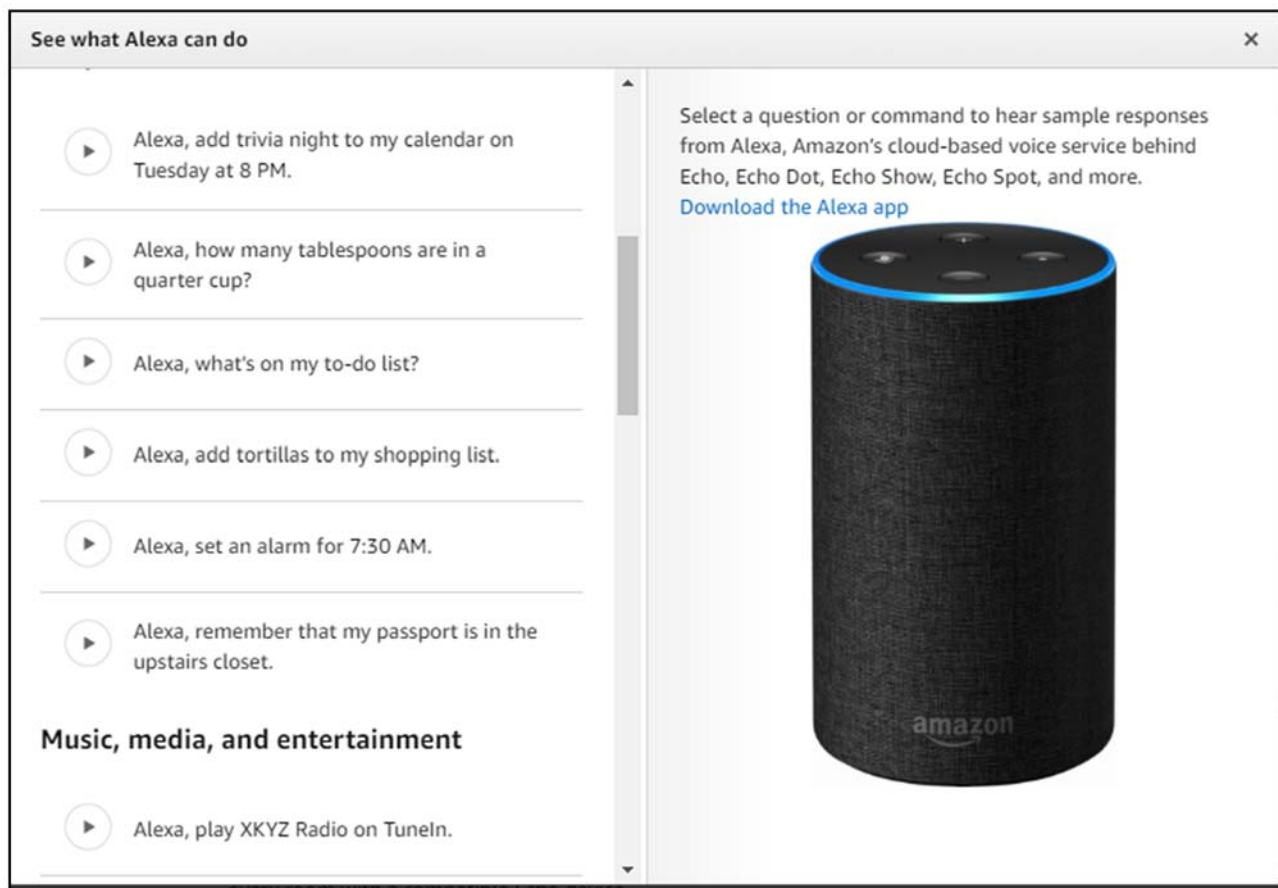
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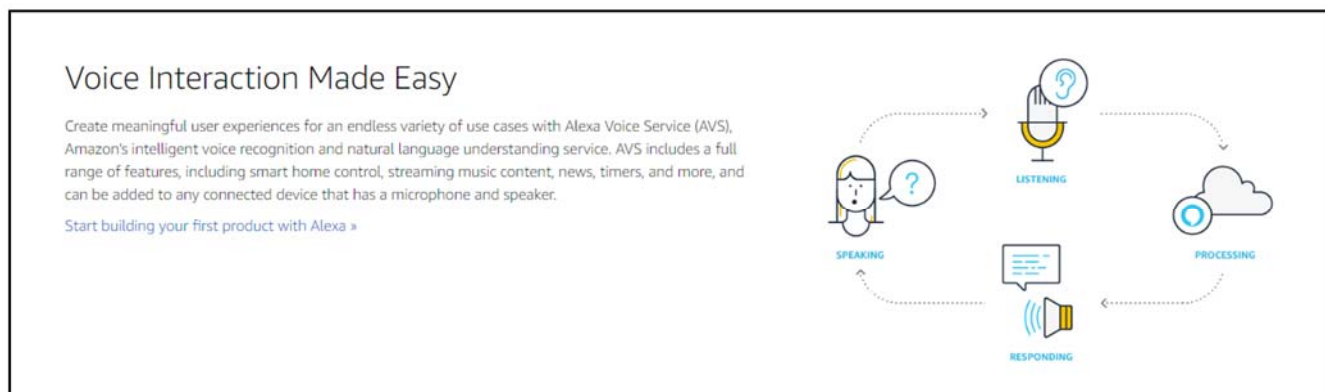
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42. The computer included in each Amazon Accused Product with Alexa is further configured to access at least one of the plurality of web sites identified by the instruction set to obtain the information to be retrieved, access the first web site of the plurality of web sites and, if the information to be retrieved is not found at the first web site, to sequentially access the plurality of web sites until the information to be retrieved is found or until the plurality of web sites has been accessed.

43. For example, the Amazon Echo device in conjunction with Alexa retrieves information from pre-selected websites that have already been crawled.

The New York Times reports that Microsoft and Amazon partnered in May last year, after Amazon CEO Jeff Bezos raised the idea with Microsoft CEO Satya Nadella at Microsoft's CEO summit. Amazon's push to partner more closely with Microsoft makes sense, as the pair are both trying to fend off Google's own assistant and Microsoft already helps power Alexa queries through its Bing search engine.

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As an online search engine, the primary objective of Bing is to connect users with the most relevant search results from the web—providing easy access to quality content produced by web publishers. To do this, Bing automatically crawls the web to build an index of new and updated pages (or URLs) to display as a set of search results relevant to a user-initiated search or action. The content of these pages may reference or contain various online resources and content including websites, images, videos, documents, and other items. Search results are generated by using computer algorithms to match the search terms you enter with results in our index. In general, we try to provide as comprehensive and as useful a collection of displayed search results as we can. We design—and continually improve—our algorithms to provide the most relevant and useful results.

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Why Alexa Voice Service?

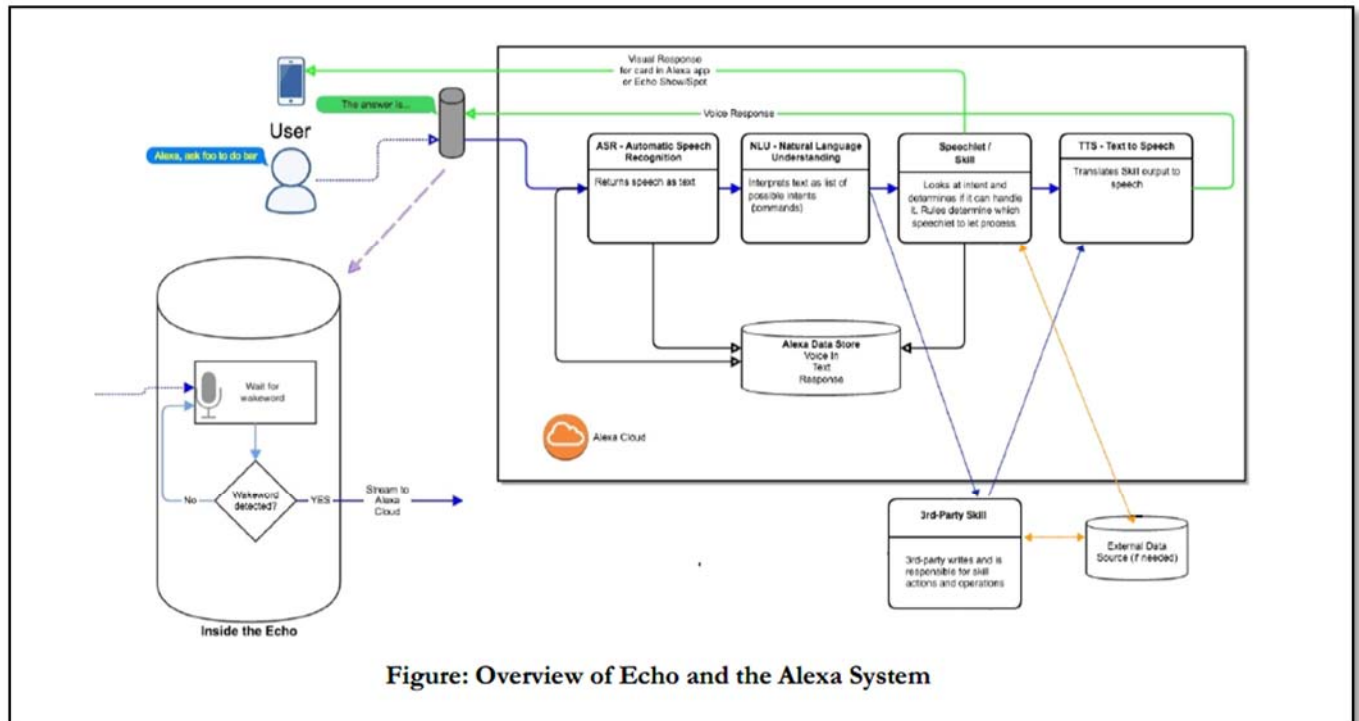
The Alexa Voice Service enables you to access cloud-based Alexa capabilities with the support of AVS APIs, hardware kits, software tools, and documentation. We simplify building voice-forward devices with Alexa built-in by handling complex speech recognition and natural language understanding in the cloud, reducing your development costs and accelerating your time to market. Best of all, regular Alexa updates bring new features to your device and add support for a growing assortment of compatible smart home devices. Build with AVS, and become part of the Alexa family.



See, e.g., <https://developer.amazon.com/alexa-voice-service>.

44. The speech synthesis devices of the Amazon Accused Products with Alexa are configured to produce an audio message containing any retrieved information from the pre-selected web sites, and are further configured to transmit said audio message to the users via the voice enabled device.

45. For example, because the Amazon Echo in conjunction with Alexa can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command.



See, e.g., Amazon, White Paper, Alexa Privacy and Data Handling Overview (July 20, 2018) at 1.

ASR and NLU

Alexa converts spoken words to text using automatic speech recognition (ASR), deduces the speaker's meaning using natural language understanding (NLU), and provides the underlying customer intent to your skill.

See, e.g., Alexa Skills Set, Amazon Alexa, <https://developer.amazon.com/en-US/alexa/alexa-skills-kit>.

Why Build Alexa Skills?

Alexa is Amazon's cloud-based voice service and the brain behind tens of millions of devices including the Echo family of devices, FireTV, Fire Tablet, and third-party devices with Alexa built-in. You can build voice experiences, or skills, that make everyday tasks faster, easier, and more delightful for customers.

Tens of thousands of developers have built skills using the Alexa Skills Kit (ASK), a collection of self-service APIs, tools, documentation, and code samples. With ASK, anyone can leverage Amazon's knowledge in voice design to build quickly and easily. Start building today to reimagine your customer experience for voice and reach customers where they are.



See, e.g., <https://developer.amazon.com/en-US/alexa/alexa-skills-kit>.

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The Alexa Voice Service enables you to access cloud-based Alexa capabilities with the support of AVS APIs, hardware kits, software tools, and documentation. We simplify building voice-forward devices with Alexa built-in by handling complex speech recognition and natural language understanding in the cloud, reducing your development costs and accelerating your time to market. Best of all, regular Alexa updates bring new features to your device and add support for a growing assortment of compatible smart home devices. Build with AVS, and become part of the Alexa family.



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Always getting smarter

Alexa is always getting smarter—the more you use Echo, the more Alexa adapts to your speech patterns, vocabulary, and personal preferences. And because Echo is always connected, updates are delivered automatically.

Just in the last few months we've added Alexa calling and messaging, multi-room music, voice profiles, and reminders, along with skills from third-party developers. [Explore more things to try with Alexa.](#)

"Alexa, remind me to call Mom on Saturday at 2 p.m."

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See, e.g., https://www.amazon.com/dp/B07456BG8N?tag=googhydr-20&hvadid=333263006615&hvpos=1t1&hvnetw=g&hvrnd=17718345068411276924&hvpone=&hvptwo=&hvmmt=e&hvdev=c&hvdvcmld=&hvlocint=&hvlocphy=1018127&hvtargid=kwd-295921616770&ref=pd_sl_2g7cb1h5ze_e#tech (annotations added).

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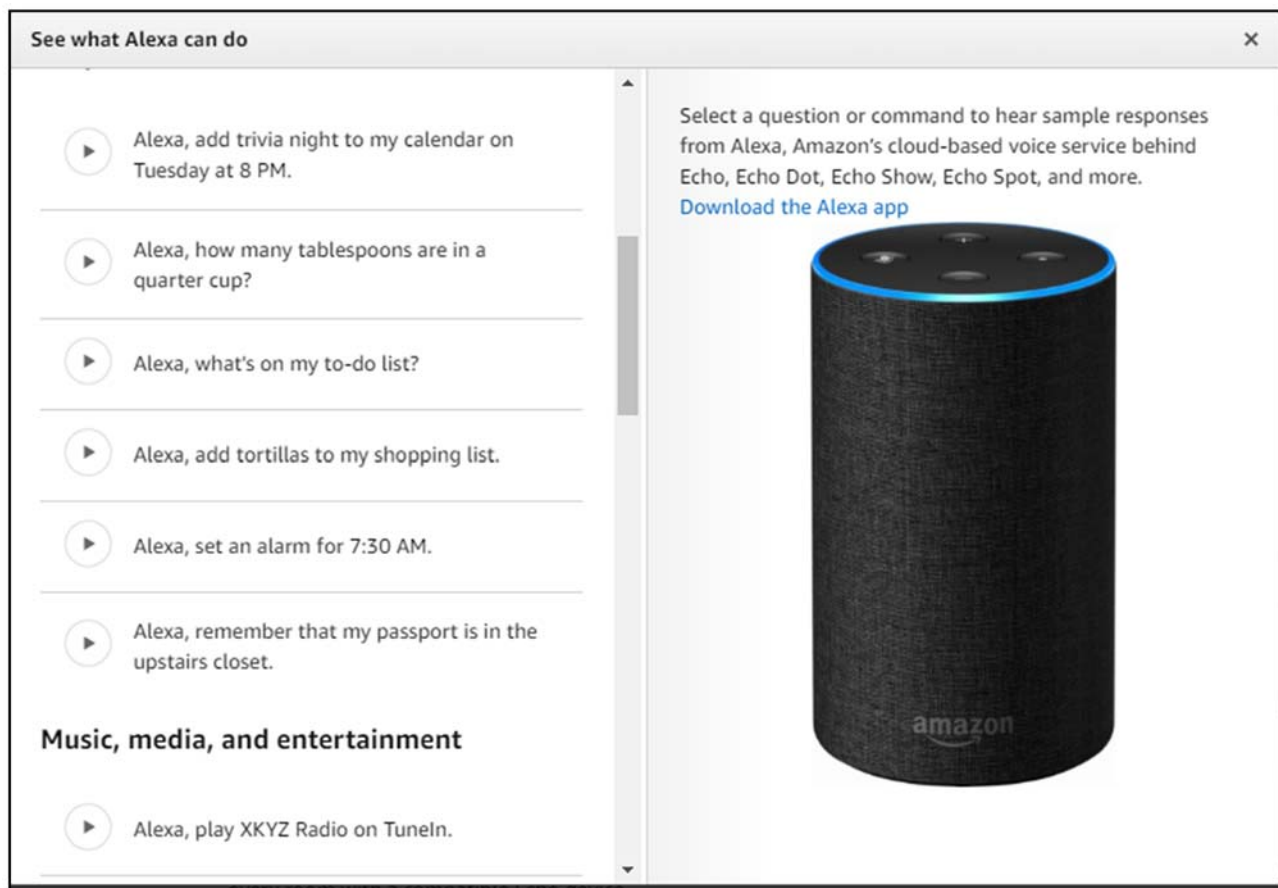
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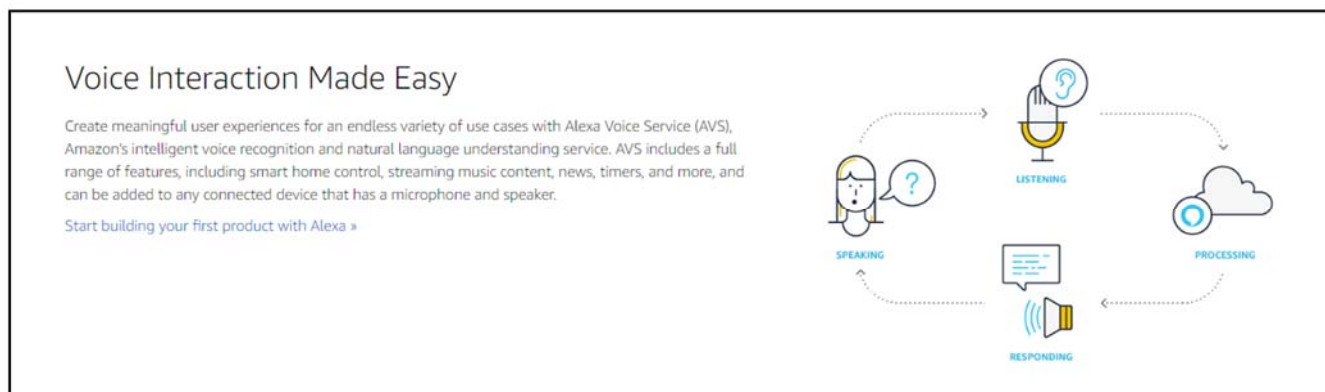
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See, e.g., *id.* (annotations added).




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See, e.g., <https://developer.amazon.com/alexa-voice-service/what-is-avs?linkCode=w61&imprToken=r0iiuJ6M7dIbzmX940rclw&slotNum=1>

Be together more



Calling

Making calls with Alexa is easy. Reach friends and family on their Alexa-enabled device, the Alexa app, or their home and mobile numbers in the US, Canada and Mexico – for free. Once you verify your phone number and sync your contacts in the Alexa app, just ask Alexa to call any of your contacts by name to make hands-free calls while you multitask. You can also make video calls to friends and family between any Echo Show, Echo Spot, or the Alexa app.

When you place calls, your contacts will see your registered number as your caller ID. You can change this setting in the Alexa app. Emergency services such as 911 are not supported. [View frequently asked questions about Alexa Calling.](#)

You can receive calls from other Alexa-enabled devices or the Alexa app. If someone is calling, Alexa will announce the incoming caller and a green light ring will appear on your Echo device. You can ask Alexa to answer or ignore the call.

Try personalizing your experience by teaching Alexa to recognize your voice. Simply say “Alexa, learn my voice” so she can recognize you, place calls to only your contacts, and play only your messages.

Just ask:
“Alexa, call Mom.”
“Alexa, answer.”
“Alexa, hang up.”

With Echo Connect, you can connect your home phone to your Alexa-enabled device to make and receive calls from anyone, using just your voice. With an Echo Connect, you can also call premium rate, emergency, and international numbers (carrier charges apply).

See, e.g., https://www.amazon.com/b/ref=aeg_lp_comm_d/ref=s9_acss_bw_cg_aegflp_1b1_w?node=17934681011&pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-6&pf_rd_r=JCEXPV9CF AK9TVXXVEKA&pf_rd_t=101&pf_rd_p=02147624-e148-4901-b449-773097cfa62e&pf_rd_i=17934672011.

46. The retrieved information is in an audio form via said voice enabled device as Amazon indicates that one can “use voice to set timers, add items to lists, and create calendar events and reminders. [One] can also check the news, weather or traffic.” On information and belief, the Amazon Echo device in conjunction with Alexa provides the retrieved information in an audio form via said voice enabled device.



See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=echo&qid=1562871943&s=gateway&sr=8-2.

47. In addition to directly infringing the '431 Patent, Amazon indirectly infringes the '431 Patent pursuant to 35 U.S.C. § 271(b) and (c). Amazon has had knowledge of the '431 Patent since at least the filing of this complaint, and has been on constructive notice of the '431 Patent due to Parus' marking since at least June 18, 2007. By the time of trial, Amazon will have known and intended (since receiving such notice) that their continued actions would actively induce the infringement of the claims of the '431 Patent.

48. Amazon indirectly infringes the '431 Patent by instructing, directing and/or requiring others, including customers, purchasers, users and developers, to perform one or more of the steps of the method claims, either literally or under the doctrine of equivalents, of the '431 Patent, where all the steps of the method claims are performed by either Amazon, its customers, purchasers, users, and developers, or some combination thereof. Amazon knew or should have known that it was inducing others, including customers, purchasers, users, and developers, to

infringe by practicing, either themselves or in conjunction with Amazon, one or more method claims of the '431 Patent.

49. Upon information and belief, Amazon knowingly and actively aided and abetted the direct infringement of the '431 Patent by instructing and encouraging its customers, purchasers, users, and developers to use the '431 Patent methods and technology. These instructions of encouragement include, but are not limited to, using the accused products as described in the claims of the '431 Patent, in advertising and promoting the use of the '431 Patent's claimed technology, and as further described in above.

50. Amazon has also infringed, and continues to infringe, claims of the '431 Patent by offering to commercially distribute, commercially distributing, making and/or importing the Amazon Accused Products, which are used in practicing the process, or using the systems, of the '431 Patent, and constitute a material part of the invention. Amazon knows the components in the Amazon Accused Products to be especially made or especially adapted for use in infringement of the '431 Patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. For example, the ordinary way of using the Amazon Accused Products infringes the patent claims, and as such, is especially adapted for use in infringement as set forth above. Accordingly, Amazon has been, and currently is, contributorily infringing the '431 Patent, in violation of 35 U.S.C. § 271(c).

COUNT II

AMAZON'S INFRINGEMENT OF U.S. PATENT NO. 9,451,084

51. Parus restates and incorporates by reference all of the allegations made in the preceding paragraphs as though fully set forth herein.

52. Parus is the owner, by assignment, of the '084 Patent. A true copy of the '084 Patent granted by the U.S. Patent & Trademark Office is attached as Exhibit 2.

53. Amazon has directly infringed, and continues to directly infringe, literally or under the doctrine of equivalents, at least independent claim 1 of Parus's '084 Patent by making, using, selling, and/or offering for sale its products that include Alexa, in the United States, in violation of 35 U.S.C. § 271(a).

54. Amazon had constructive notice of the '084 Patent based on Parus's marking at least as of February 21, 2018. Upon filing of the complaint or shortly thereafter, Defendant has actual knowledge of the '084 Patent.

55. Amazon's acts of direct infringement of the '084 Patent are willful, and have caused and will continue to cause substantial damage and irreparable harm to Parus, and Parus has no adequate remedy at law.

56. The Amazon Accused Products made or sold by Amazon directly infringe at least independent claim 1 of the '084 Patent, including at least the Amazon Echo and other Amazon products that incorporate Alexa. For example, the Amazon Echo comes with Alexa preinstalled.



See, e.g.,

https://www.amazon.com/gp/product/B06XCM9LJ4/ref=s9_acsd_al_bw_c_x_6_w?pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-4&pf_rd_r=7WEC0RE7WX15PC8SY4BY&pf_rd_t=101&pf_rd_p=26ee7d18-7cee-420f-a95c-f4be02106756&pf_rd_i=9818047011.

WHERE CAN I USE ALEXA?

In order to use Alexa, you'll need a device that integrates the voice technology. This typically means an Amazon device, such as an **Echo**, **Echo Dot**, or **Echo Show**, but this cloud-based personal voice assistant has also been integrated with some third-party systems. Devices like the **Fire TV** are also compatible with Alexa, as are some third-party devices: the **Ecobee Switch+** light switch, the **LG InstaView refrigerator**, and the aforementioned **Sonos One** speaker. Someone even programmed Alexa to work with a **Big Mouth Billy Bass**.

See, e.g., What is Alexa, and what can Amazon's virtual assistant do for you? (Feb. 16, 2019), available at <https://www.digitaltrends.com/home/what-is-amazons-alexa-and-what-can-it-do/>.

57. Further, Amazon makes instructions available for setting up and using the Amazon Echo in conjunction with Alexa.



See, e.g., https://m.media-amazon.com/images/G/01/kindle/merch/2018/Alexa/User_Guide/Update/Echo_Plus_2nd_Gen_QSG_US_CB1539033940.pdf?pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandise-search-5&pf_rd_r=GT6YH640T1R7NT78C62S&pf_rd_t=101&pf_rd_p=116e29b1-6379-409e-a135-db7ad24bd07e&pf_rd_i=18116225011.

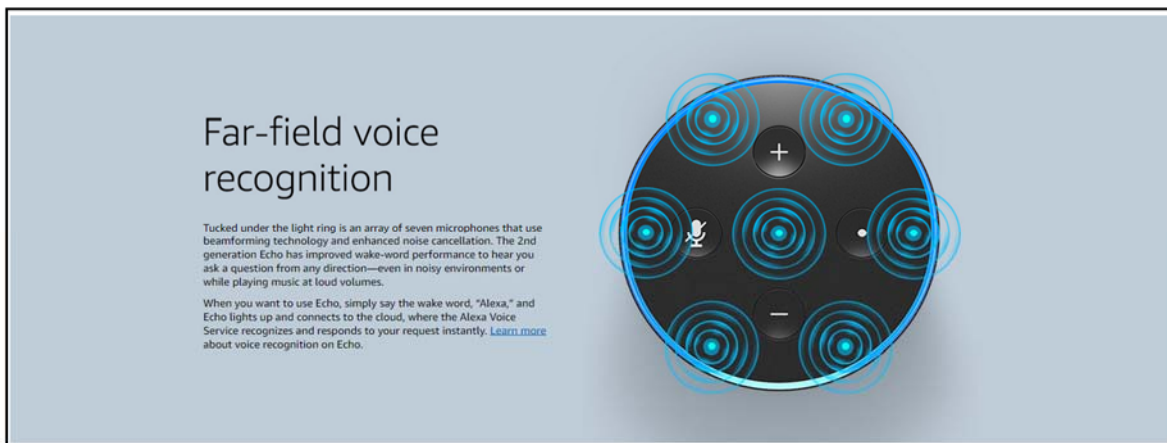


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58. The Amazon Accused Products in conjunction with Alexa form a system for acquiring information from one or more sources maintaining a listing of web sites by receiving speech commands uttered by users into a voice-enabled device and for providing information retrieved from the web sites to the users in an audio form via the voice-enabled device.

59. See e.g., Andrew Nusca, How voice recognition will change the world (Nov. 4, 2011), available at <https://www.zdnet.com/article/how-voice-recognition-will-change-the-world/>; Gene Munster, Will Thompson, Annual Digital Assistant IQ Test – Siri, Google Assistant, Alexa, Cortana (Jul. 25, 2018), available at <https://loupventures.com/annual-digital-assistant-iq-test-siri-google-assistant-alexa-cortana/>; Voice Browsing (Jan. 29, 2019), available at <https://www.w3.org/standards/webofdevices/voice>; What is Alexa, and what can Amazon's virtual assistant do for you? (Feb. 16, 2019), available at <https://www.digitaltrends.com/home/what-is-amazons-alexa-and-what-can-it-do/>; Alexa Voice Service, available at <https://developer.amazon.com/alexa-voice-service>; Alexa Skills Set, Amazon Alexa, <https://developer.amazon.com/en-US/alexa/alexa-skills-kit>.

60. For example, each of the Amazon Accused Products, including the Amazon Echo, includes a microphone and a speaker:



See, e.g., https://www.amazon.com/dp/B07456BG8N?tag=googhydr-20&hvadid=333263006615&hvpos=1t1&hvnetw=g&hvrnd=17718345068411276924&hvpon=&hvpone=&hvptwo=&hvqmt=e&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=1018127&hvtargid=kwd-295921616770&ref=pd_sl_2g7cb1h5ze_e#tech.



See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=%20echo&qid=1562871943&s=gateway&sr=8-2.

But really, what exactly is Alexa? When you ask Alexa a question, what you're doing is communicating with a cloud-based service. Amazon has designed the Alexa Voice Service (AVS) to mimic real conversations, but you're actually using intuitive voice commands to get this service to perform specific tasks. "Alexa" is simply the "wake word" that alerts the service to start listening to your voice. For most devices, you just have to say it to get a response.

Here's how Amazon describes the [Alexa Voice Service](#) on its developer page:

"The Alexa Voice Service (AVS) is Amazon's intelligent voice recognition and natural language understanding service that allows you to voice-enable any connected device that has a microphone and speaker."

What is Alexa, and what can Amazon's virtual assistant do for you? (Feb. 16, 2019), available at <https://www.digitaltrends.com/home/what-is-amazons-alexa-and-what-can-it-do/>.

61. The Amazon Echo device in conjunction with Alexa is a system for retrieving information from pre-selected web sites by uttering speech commands into a voice enabled device. Amazon indicates that the Amazon Echo in conjunction with Alexa will make tasks easier.

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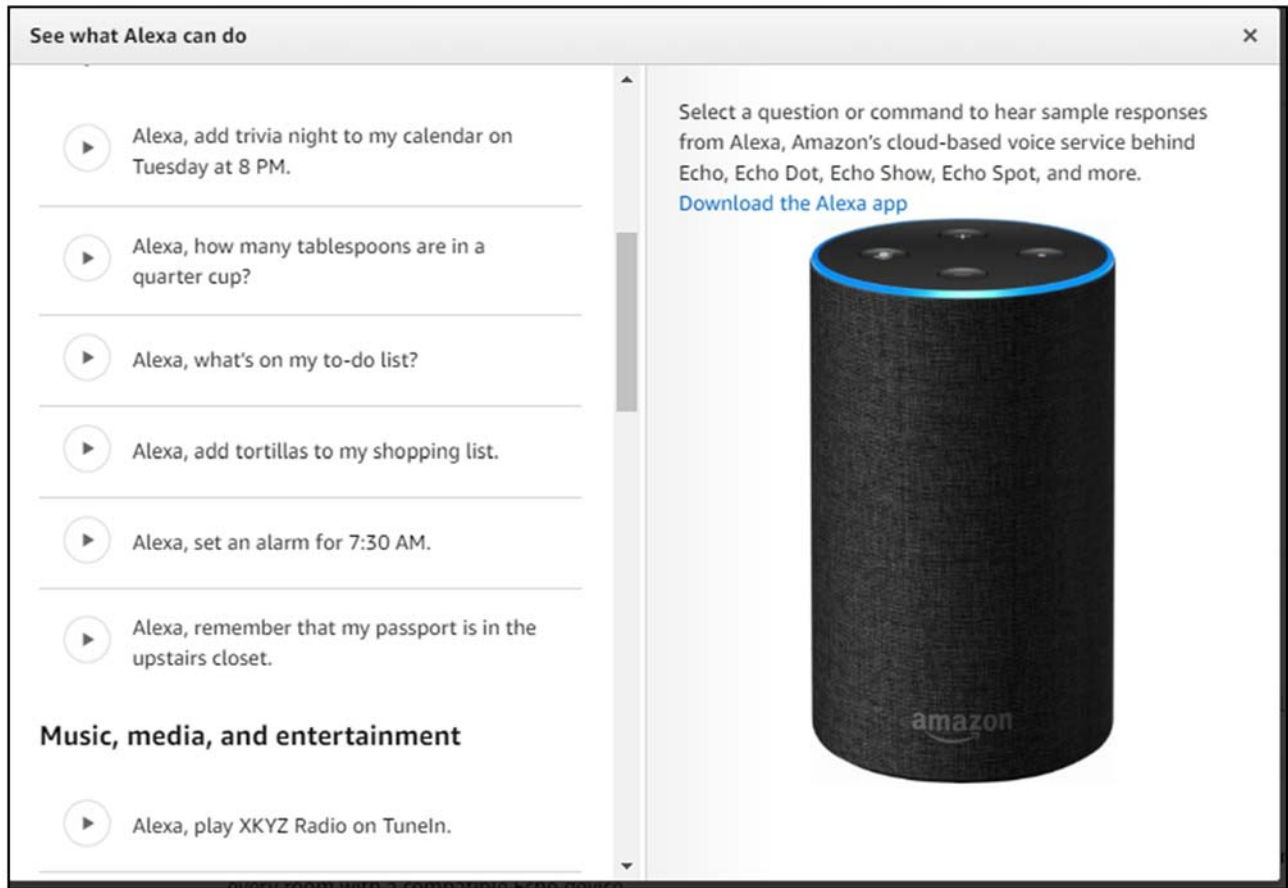
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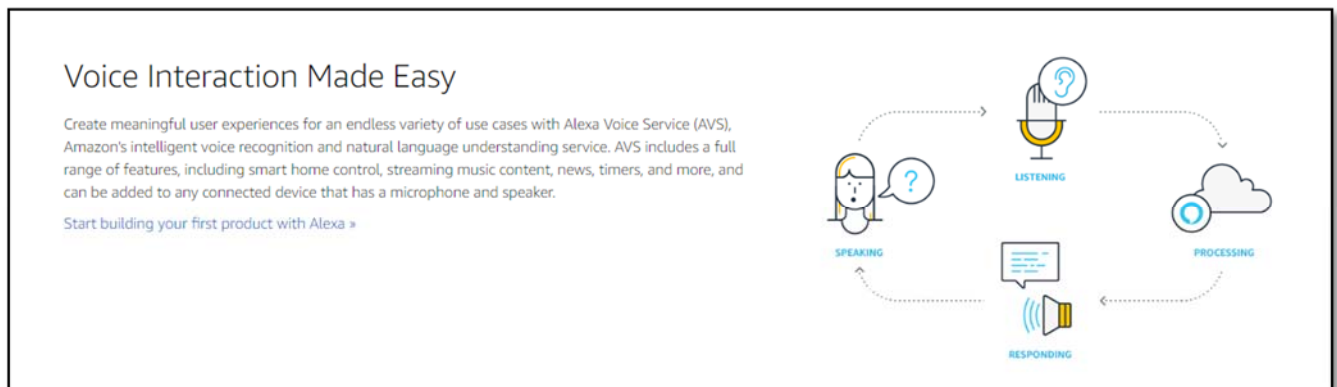
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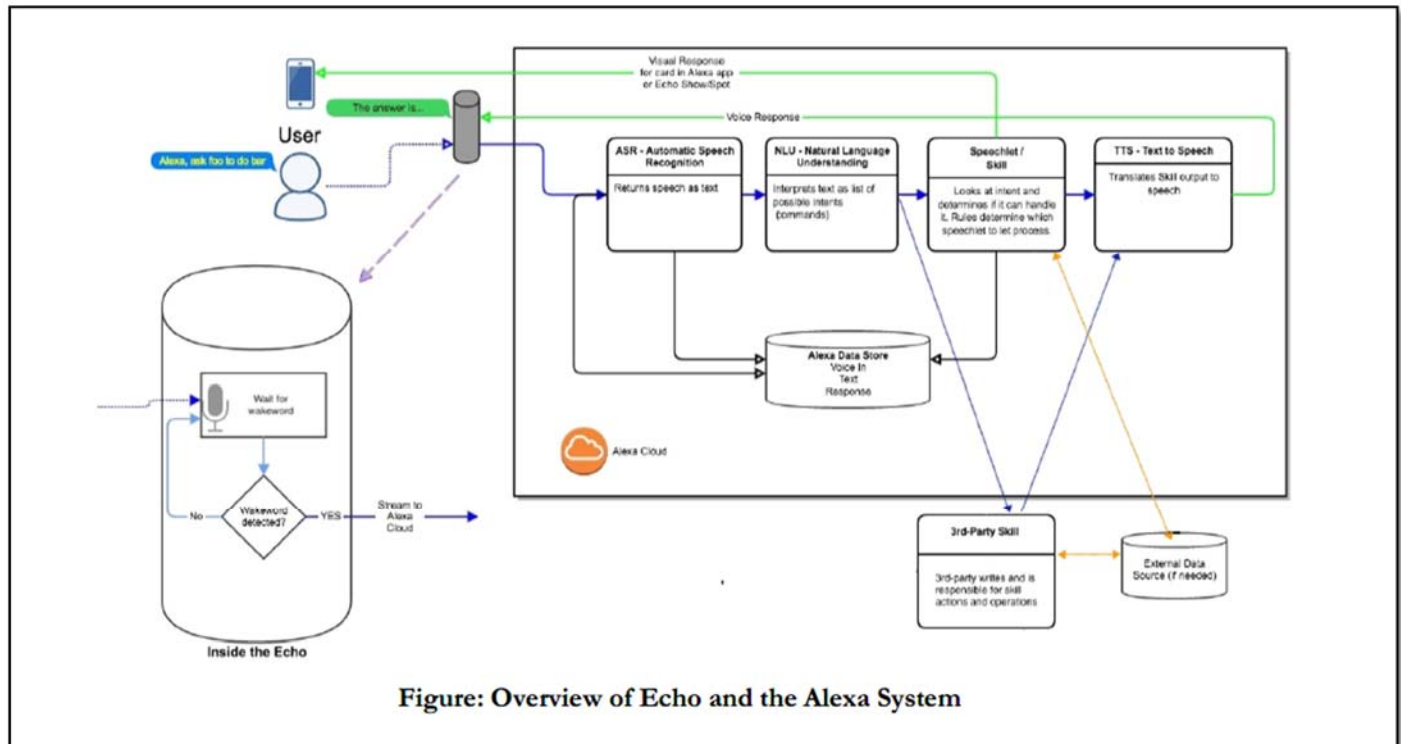
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See, e.g., <https://developer.amazon.com/alexa-voice-service/what-is-avs?linkCode=w61&imprToken=r0iiuJ6M7dIbzmX940rclw&slotNum=1>



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See, e.g., Alexa Skills Set, Amazon Alexa, <https://developer.amazon.com/en-US/alexa/alexa-skills-kit>.

62. The Amazon Echo device in conjunction with Alexa retrieves information from pre-selected websites that have already been crawled.

The New York Times reports that Microsoft and Amazon partnered in May last year, after Amazon CEO Jeff Bezos raised the idea with Microsoft CEO Satya Nadella at Microsoft's CEO summit. Amazon's push to partner more closely with Microsoft makes sense, as the pair are both trying to fend off Google's own assistant and Microsoft already helps power Alexa queries through its Bing search engine.

See, e.g., <https://www.theverge.com/2017/8/30/16224876/microsoft-amazon-cortana-alexa-partnership>

How Bing delivers search results

As an online search engine, the primary objective of Bing is to connect users with the most relevant search results from the web—providing easy access to quality content produced by web publishers. To do this, Bing automatically crawls the web to build an index of new and updated pages (or URLs) to display as a set of search results relevant to a user-initiated search or action. The content of these pages may reference or contain various online resources and content including websites, images, videos, documents, and other items. Search results are generated by using computer algorithms to match the search terms you enter with results in our index. In general, we try to provide as comprehensive and as useful a collection of displayed search results as we can. We design—and continually improve—our algorithms to provide the most relevant and useful results.

See, e.g., <http://help.bing.microsoft.com/#apex/18/en-US/10016/0>

Bingbot is the name of the crawler used by Bing to crawl or "spider" the web. It is Bingbot's job to find new and updated pages on websites across the Internet, so that they can be processed for indexation. When crawling a website, Bingbot looks at robots.txt for special instructions from the website owner. Bingbot honors robots.txt directives, including the *crawl-delay* setting, and, in the absence of a crawl-delay, respects the input from Webmasters in the Crawl Control Feature.

See, e.g., <https://www.bing.com/webmaster/help/how-to-report-an-issue-with-bingbot-25c19802>

Meet our crawlers

Bing operates five main crawlers today:

CRAWLER	ROLE OF THIS PARTICULAR CRAWLER
Bingbot	Bingbot is our standard crawler and handles most of our crawling needs each day. Bingbot uses a couple of different user agent strings which include several mobile variants with which we crawl the mobile web (see here for details on the latter).
MSNBot	MSNBot used to be our standard crawler before the advent of Bingbot and still handles some of our crawling duties.
MSNBot-Media	MSNBot-Media is our crawler for images and video.
AdlidxBot	AdlidxBot is the crawler used by Bing Ads. AdlidxBot is responsible for crawling ads and following through to websites from those ads for quality control purposes. Same as Bingbot, AdlidxBot has both desktop and mobile variants.
BingPreview	BingPreview is used to generate page snapshots. You can find more details about Bing Preview here . Note that BingPreview also has "desktop" and "mobile" variants.

See, e.g., <https://www.bing.com/webmaster/help/which-crawlers-does-bing-use-8c184ec0>

Bing's crawler, Bingbot is a key component of the Bing platform. Bingbot's main function is to:

- Download webpages to get the latest content and discover new links from existing known links.
- Verify that web documents already indexed are still valid, not dead links, helping to keep the Bing index comprehensive and fresh to answer customer queries with relevant results.

See, e.g., <https://www.searchenginejournal.com/why-how-bing-plans-to-improve-its-crawler-bingbot/291979/#close>

For example, Bing customers searching for the latest space rocket launch can search and find new relevant webpages only seconds after this rocket launch. To be able to link to these new URLs, we have to discover, select, crawl, process, and then index them.

To discover these new URLs, we have to crawl regularly existing known URLs to monitor for new URLs.

Once discovered, we have to crawl to get the content for these new URLs.

We have to continue crawling these newly indexed URLs regularly to check for potential content changes and verify that these webpages are still valid, not dead links.

In other words, we crawl each URL in our system more than once.

See id.

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See, e.g., <https://developer.amazon.com/alexa-voice-service>.

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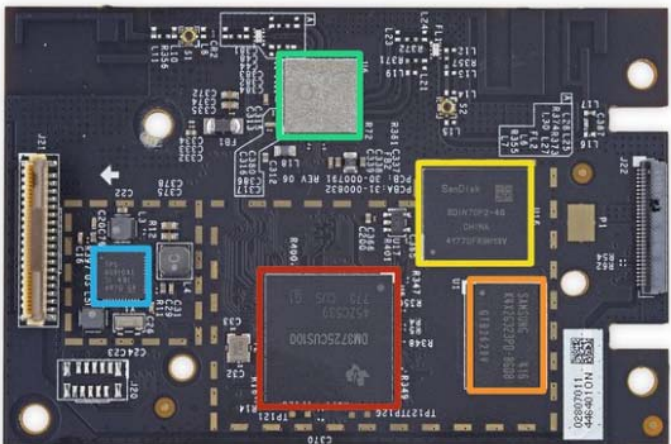
Always ready to help

Make your life easier at home. Use your voice to set timers, add items to lists, and create calendar events and reminders. You can also check the news, weather, or traffic. Ask for sports scores, movie showtimes, restaurant hours, or information.



See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=echo&qid=1562871943&s=gateway&sr=8-2.

64. The Amazon Accused Products in conjunction with Alexa include at least one computing device, the computing device operatively coupled to one or more networks. For example, the Amazon Echo includes a Texas Instruments DM3725 ARM Cortex-A8 processor.



● Here's what's powering the Echo:

- Texas Instruments **DM3725CUS100** Digital Media Processor
- Samsung **K4X2G323PD-8GD8** 256 MB LPDDR1 RAM
- SanDisk **SDIN7DP2-4G** 4 GB iNAND Ultra Flash Memory
- Qualcomm Atheros QCA6234X-AM2D Wi-Fi and Bluetooth Module
- Texas Instruments **TPS65910A1** Integrated Power Management IC


See, e.g., <https://www.ifixit.com/Teardown/Amazon+Echo+Teardown/33953>

65. That computer is operatively connected to the internet because the Amazon Echo includes both Wi-Fi connectivity and cellular connectivity.

Echo Plus	
Size	5.8" x 3.9" x 3.9" (148 x 99 x 99 mm)
Weight	27.5 oz. (780 grams) <i>Actual size and weight may vary by manufacturing process</i>
Wi-Fi connectivity	Dual-band Wi-Fi supports 802.11 a/b/g/n/ac (2.4 and 5 GHz) networks. Does not support connecting to ad-hoc (or peer-to-peer) Wi-Fi networks.
ZigBee connectivity	Built-in ZigBee smart home hub supports ZigBee light bulbs, locks, sensors, plugs, and in-wall switches.
Bluetooth connectivity	Advanced Audio Distribution Profile (A2DP) support for audio streaming from your mobile device to Echo or from Echo to your Bluetooth speaker. Audio/Video Remote Control Profile (AVRCP) for voice control of connected mobile devices. Hands-free voice control is not supported for Mac OS X devices. Bluetooth speakers requiring PIN codes are not supported.
Audio	3.0" (76.2 mm) neodymium woofer and 0.8" (20 mm) tweeter
Alexa app	The Alexa app is compatible with Fire OS, Android, and iOS devices. A list of supported operating systems can be found here .
Accessibility Features	The Alexa app and Alexa-enabled products include several features for customers with accessibility needs related to vision, hearing, mobility, and speech. Learn more about Alexa accessibility .
Warranty and Service	1 year limited warranty and service included . Optional 1-year , 2-year , and 3-year extended warranty available for U.S. customers sold separately. Use of Echo Plus is subject to the terms found here .
Setup Technology	Amazon Wi-Fi simple setup enables customers to connect smart devices to their Wi-Fi network in a few easy steps. Wi-Fi simple setup is another way Alexa is always getting smarter. Learn more
Included in the Box	Echo Plus, power adapter (30W), and Quick Start Guide.
Generation	Echo Plus 2nd Generation - 2018 release

See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=echo&qid=1562871943&s=gateway&sr=8-2

Be together more



Calling

Making calls with Alexa is easy. Reach friends and family on their Alexa-enabled device, the Alexa app, or their home and mobile numbers in the US, Canada and Mexico – for free. Once you verify your phone number and sync your contacts in the Alexa app, just ask Alexa to call any of your contacts by name to make hands-free calls while you multitask. You can also make video calls to friends and family between any Echo Show, Echo Spot, or the Alexa app.

When you place calls, your contacts will see your registered number as your caller ID. You can change this setting in the Alexa app. Emergency services such as 911 are not supported. [View frequently asked questions about Alexa Calling.](#)

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Just ask:
 “Alexa, call Mom.”
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 “Alexa, hang up.”

With Echo Connect, you can connect your home phone to your Alexa-enabled device to make and receive calls from anyone, using just your voice. With an Echo Connect, you can also call premium rate, emergency, and international numbers (carrier charges apply).

See, e.g.,

https://www.amazon.com/b/ref=aeg_lp_comm_d/ref=s9_acss_bw_cg_aegflp_1b1_w?node=17934681011&pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-6&pf_rd_r=JCEXPV9CFAK9TVXXVEKA&pf_rd_t=101&pf_rd_p=02147624-e148-4901-b449-773097cfa62e&pf_rd_i=17934672011 .

66. The Amazon Accused Products in conjunction with Alexa include at least one speaker-independent speech-recognition device, the speaker-independent speech-recognition device operatively connected to the computing device and configured to receive the speech commands.

67. For example, the Amazon Echo in conjunction with Alexa allows a user to talk through the device to send commands to the cloud.

Why Build Alexa Skills?

Alexa is Amazon's cloud-based voice service and the brain behind tens of millions of devices including the Echo family of devices, FireTV, Fire Tablet, and third-party devices with Alexa built-in. You can build voice experiences, or skills, that make everyday tasks faster, easier, and more delightful for customers.

Tens of thousands of developers have built skills using the Alexa Skills Kit (ASK), a collection of self-service APIs, tools, documentation, and code samples. With ASK, anyone can leverage Amazon's knowledge in voice design to build quickly and easily. Start building today to reimagine your customer experience for voice and reach customers where they are.



See, e.g., <https://developer.amazon.com/en-US/alexa/alexa-skills-kit>.

Always getting smarter

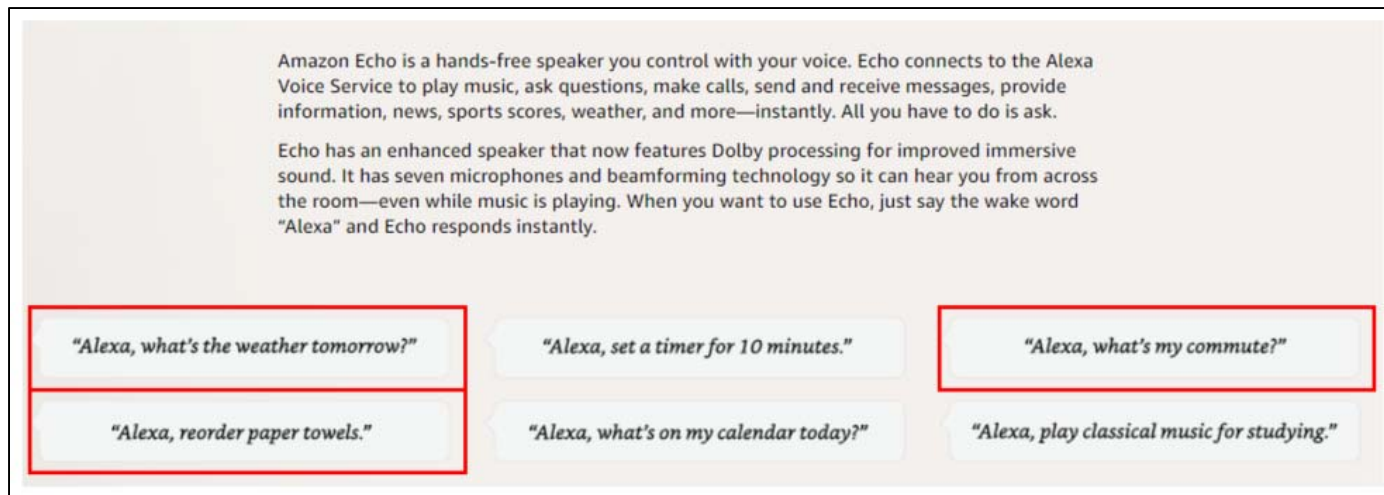
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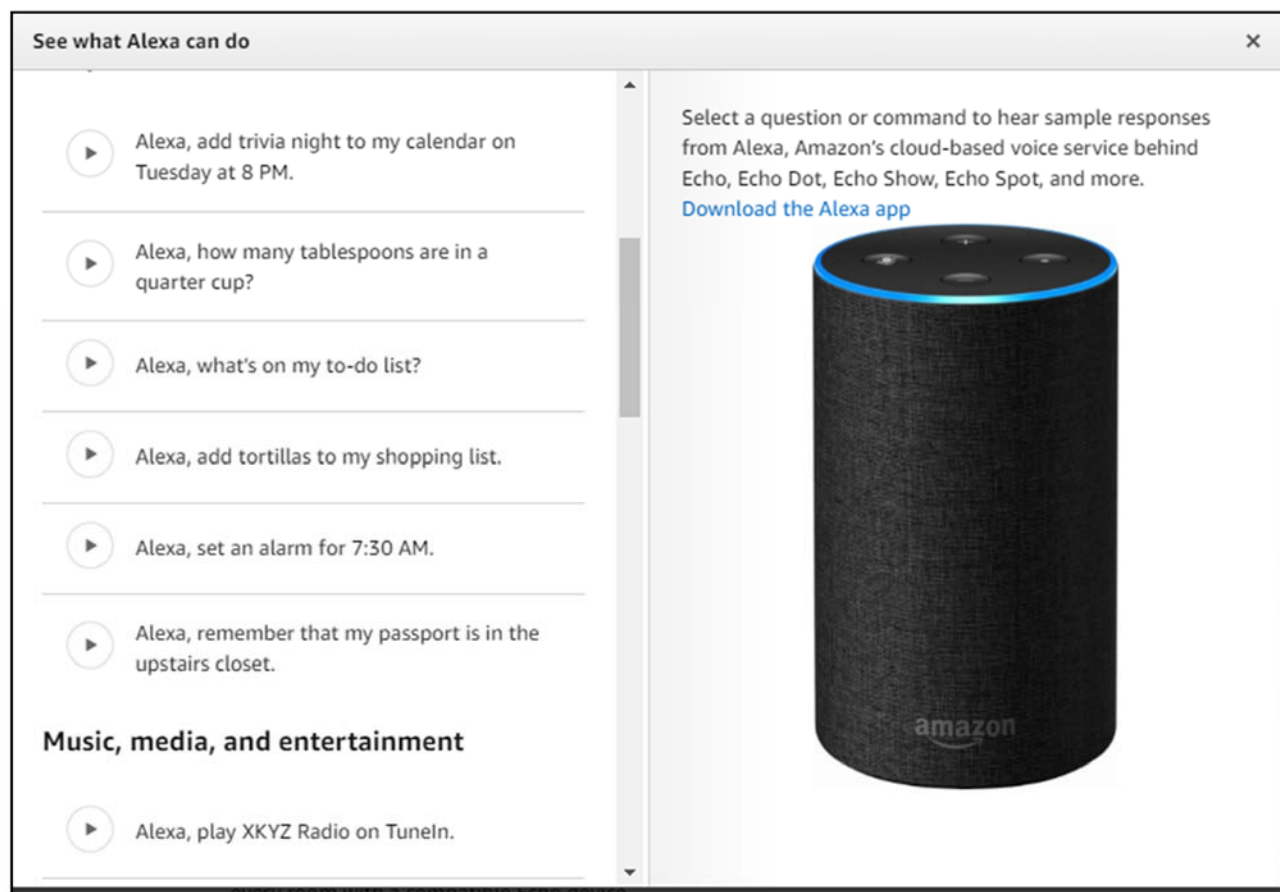
*"Alexa, remind me to call Mom
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See, e.g., *id.* (annotations added).

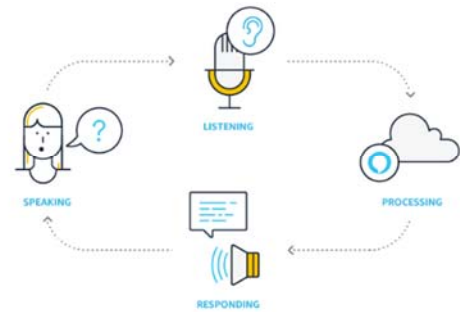


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Voice Interaction Made Easy

Create meaningful user experiences for an endless variety of use cases with Alexa Voice Service (AVS), Amazon's intelligent voice recognition and natural language understanding service. AVS includes a full range of features, including smart home control, streaming music content, news, timers, and more, and can be added to any connected device that has a microphone and speaker.

Start building your first product with Alexa »



See, e.g., <https://developer.amazon.com/alexa-voice-service/what-is-avs?linkCode=w6l&imprToken=r0iiuJ6M7dIbzmX940rclw&slotNum=1>

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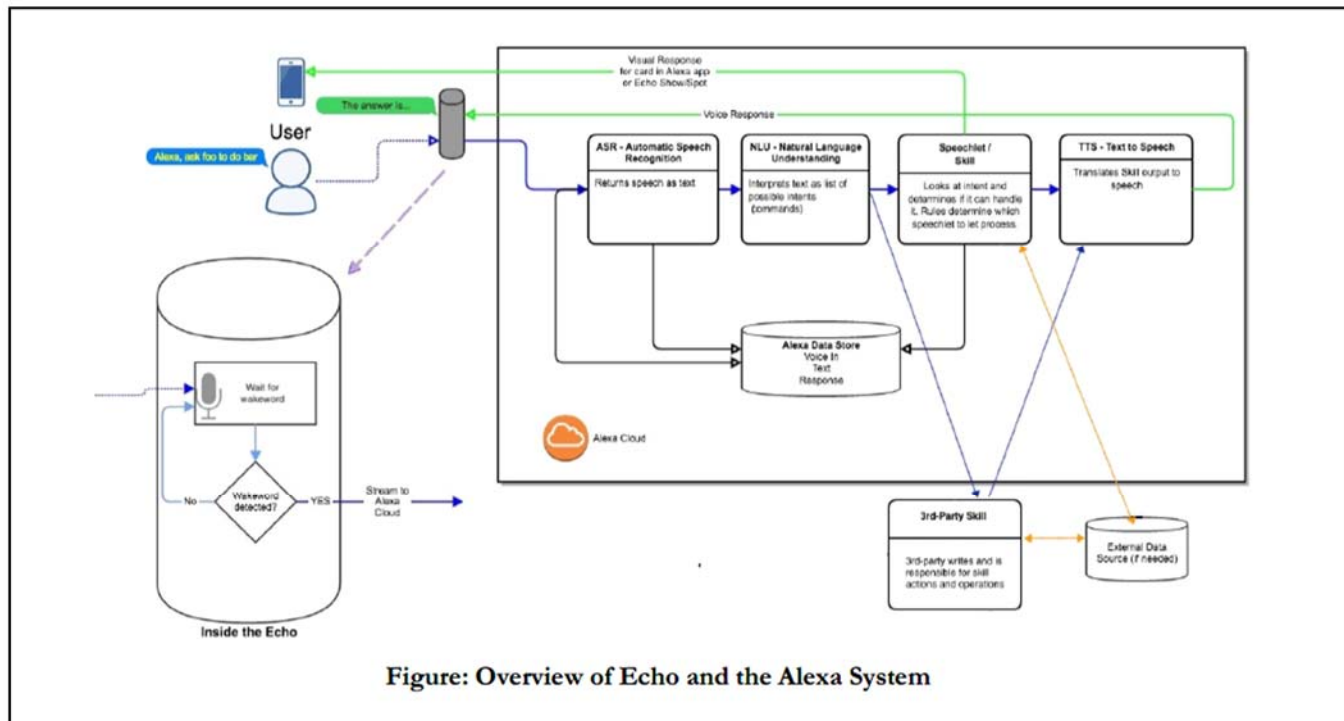
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68. The Amazon Accused Products in conjunction with Alexa include at least one speech-synthesis device, the speech-synthesis device operatively connected to the computing device.

69. For example, the Amazon Echo in conjunction with Alexa can handle voice commands on the device itself or with help from the cloud.



See, e.g., Amazon, White Paper, Alexa Privacy and Data Handling Overview (July 20, 2018) at 1.

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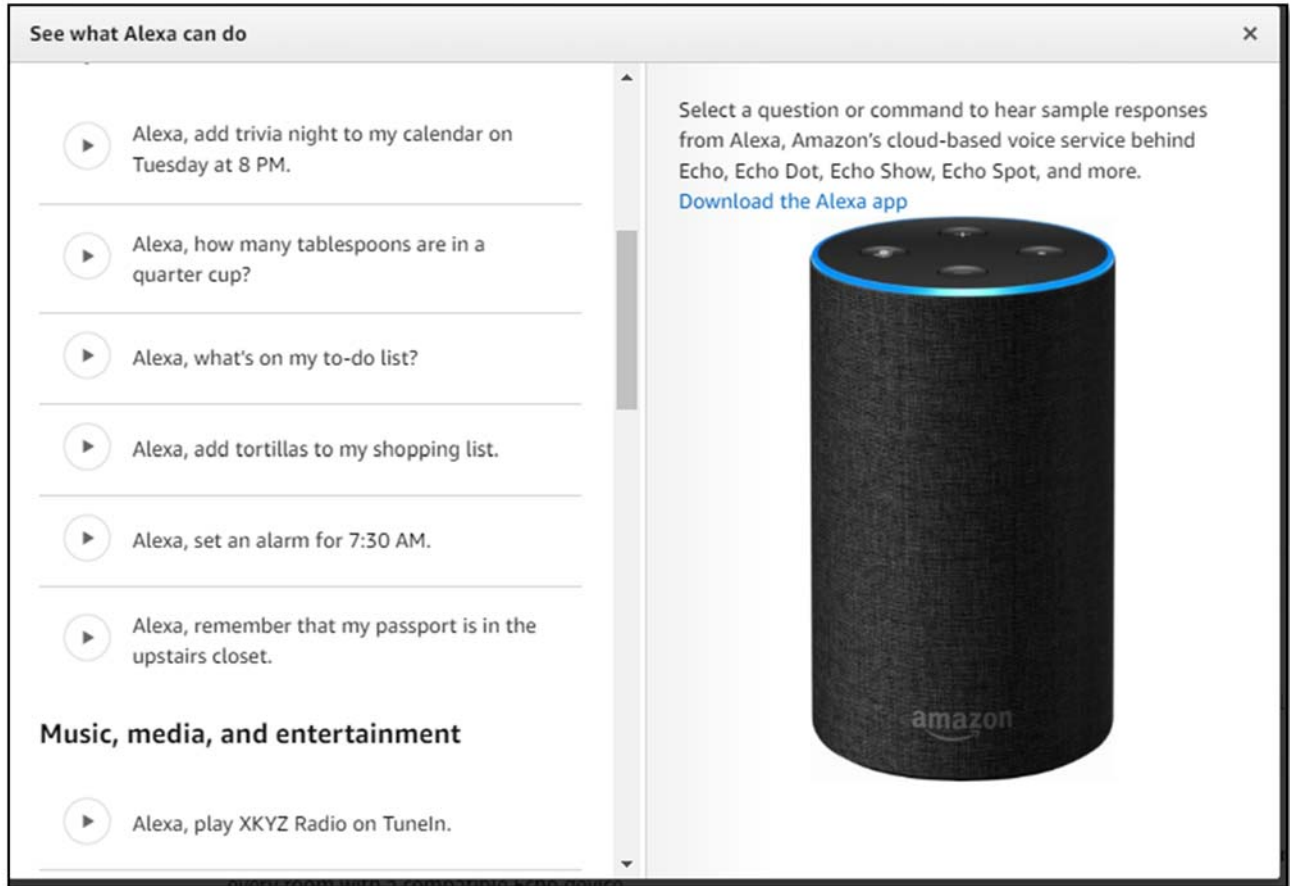
"Alexa, what's my commute?"

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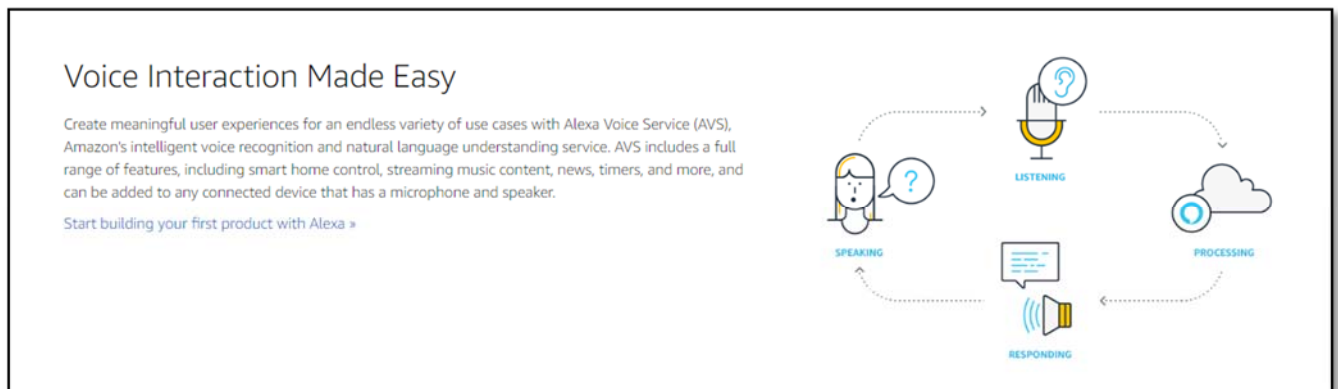
"Alexa, what's on my calendar today?"

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See, e.g., *id.* (annotations added).




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See, e.g., <https://developer.amazon.com/alexa-voice-service/what-is-avs?linkCode=w61&imprToken=r0iiuJ6M7dIbzmX940rclw&slotNum=1>

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70. The Amazon Accused Products in conjunction with Alexa include a memory operatively associated with the computing device with at least one instruction set for identifying the information to be retrieved, the instruction set being associated with the computing device.

71. For example, the Amazon Echo includes a memory that is associated with the computing device and includes at least one instruction set for Alexa in order to allow Alexa to run.

Data Storage

Different types of data are used and stored by the Alexa system to provide the Alexa service. Configuration parameters are set by the user either on the device or using the Alexa app. These parameters include such

things as the device location (set by the administrator or user), preferred time zone and unit measures, volume level, and other preferences.

Audio and text inputs are the core piece of Alexa data. As described above, voice recordings are processed through speech-to-text algorithms and then through natural language processing algorithms to extract the user's intent and the parameters of the Alexa query. These systems use machine learning techniques to continuously improve themselves with each input.

See, e.g., Amazon, White Paper, Alexa Privacy and Data Handling Overview (July 20, 2018) at 6-7.

72. A Person of Ordinary Skill in the Art ("POSITA") would understand that this memory would be operatively coupled to the computing device and there would be at least one instruction set being associated with the computing device stored therein.

73. The Amazon Accused Products in conjunction with Alexa include at least one instruction set for identifying the information to be retrieved comprising a plurality of web site addresses for the listing of web sites, each web site address identifying a web site containing the information to be retrieved.

74. For example, the Amazon Echo device in conjunction with Alexa retrieves information from pre-selected websites that have already been crawled.

The New York Times reports that Microsoft and Amazon partnered in May last year, after Amazon CEO Jeff Bezos raised the idea with Microsoft CEO Satya Nadella at Microsoft's CEO summit. Amazon's push to partner more closely with Microsoft makes sense, as the pair are both trying to fend off Google's own assistant and Microsoft already helps power Alexa queries through its Bing search engine.

See, e.g., <https://www.theverge.com/2017/8/30/16224876/microsoft-amazon-cortana-alexa-partnership>

How Bing delivers search results

As an online search engine, the primary objective of Bing is to connect users with the most relevant search results from the web—providing easy access to quality content produced by web publishers. To do this, Bing automatically crawls the web to build an index of new and updated pages (or URLs) to display as a set of search results relevant to a user-initiated search or action. The content of these pages may reference or contain various online resources and content including websites, images, videos, documents, and other items. Search results are generated by using computer algorithms to match the search terms you enter with results in our index. In general, we try to provide as comprehensive and as useful a collection of displayed search results as we can. We design—and continually improve—our algorithms to provide the most relevant and useful results.

See, e.g., <http://help.bing.microsoft.com/#apex/18/en-US/10016/0>

Bingbot is the name of the crawler used by Bing to crawl or “spider” the web. It is Bingbot's job to find new and updated pages on websites across the Internet, so that they can be processed for indexation. When crawling a website, Bingbot looks at robots.txt for special instructions from the website owner. Bingbot honors robots.txt directives, including the *crawl-delay* setting, and, in the absence of a crawl-delay, respects the input from Webmasters in the Crawl Control Feature.

See, e.g., <https://www.bing.com/webmaster/help/how-to-report-an-issue-with-bingbot-25c19802>

Meet our crawlers

Bing operates five main crawlers today:

CRAWLER	ROLE OF THIS PARTICULAR CRAWLER
Bingbot	Bingbot is our standard crawler and handles most of our crawling needs each day. Bingbot uses a couple of different user agent strings which include several mobile variants with which we crawl the mobile web (see here for details on the latter).
MSNBot	MSNBot used to be our standard crawler before the advent of Bingbot and still handles some of our crawling duties.
MSNBot-Media	MSNBot-Media is our crawler for images and video.
AdlidxBot	AdlidxBot is the crawler used by Bing Ads. AdlidxBot is responsible for crawling ads and following through to websites from those ads for quality control purposes. Same as Bingbot, AdlidxBot has both desktop and mobile variants.
BingPreview	BingPreview is used to generate page snapshots. You can find more details about Bing Preview here . Note that BingPreview also has "desktop" and "mobile" variants.

See, e.g., <https://www.bing.com/webmaster/help/which-crawlers-does-bing-use-8c184ec0>

Bing's crawler, Bingbot is a key component of the Bing platform. Bingbot's main function is to:

- Download webpages to get the latest content and discover new links from existing known links.
- Verify that web documents already indexed are still valid, not dead links, helping to keep the Bing index comprehensive and fresh to answer customer queries with relevant results.

See, e.g., <https://www.searchenginejournal.com/why-how-bing-plans-to-improve-its-crawler-bingbot/291979/#close>

For example, Bing customers searching for the latest space rocket launch can search and find new relevant webpages only seconds after this rocket launch. To be able to link to these new URLs, we have to discover, select, crawl, process, and then index them.

To discover these new URLs, we have to crawl regularly existing known URLs to monitor for new URLs.

Once discovered, we have to crawl to get the content for these new URLs.

We have to continue crawling these newly indexed URLs regularly to check for potential content changes and verify that these webpages are still valid, not dead links.

In other words, we crawl each URL in our system more than once.

See id.

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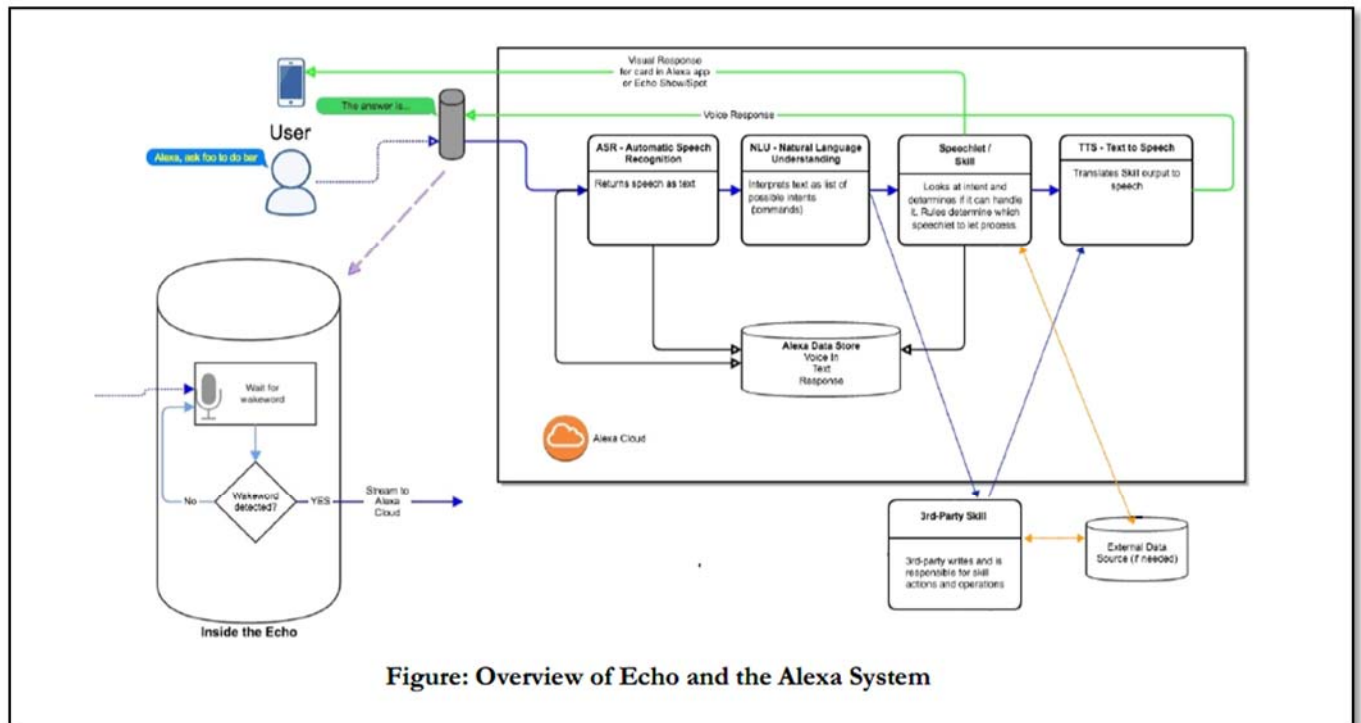
See, e.g., <https://developer.amazon.com/alexa-voice-service>.

75. Microsoft / Bing uses technology to crawl the web to index web sites with information to respond to a search request. The indexed websites are identified by web site addresses. These indexed websites are “a plurality of pre-selected web site addresses,” and each such website “indentif[ies] a web site containing said information to be retrieved.”

76. The Amazon Accused Products in conjunction with Alexa include at least one recognition grammar associated with the computing device, each recognition grammar corresponding to each instruction set and corresponding to a speech command, the speech command comprising an information request provided by the user, the speaker-independent speech-recognition device configured to receive the speech command from the users via the voice-enabled device and to select the corresponding recognition grammar upon receiving the speech command.

77. For example, on information and belief, the Amazon Echo, in connection with Alexa, utilizes an artificial neural network, which is a speech recognition grammar, to process voice commands. On information and belief, Amazon provides the capability for a user to define recognition grammars via skills. The Amazon Echo then also utilizes these user-defined speech recognition grammars when executing the skills triggered by a voice command. The Amazon

Echo can handle voice commands on the device itself when offline, indicating that at least one recognition grammar corresponding to each said instruction set and corresponding to a speech command is on the device itself. The Amazon Echo can also handle voice commands with help from the cloud.



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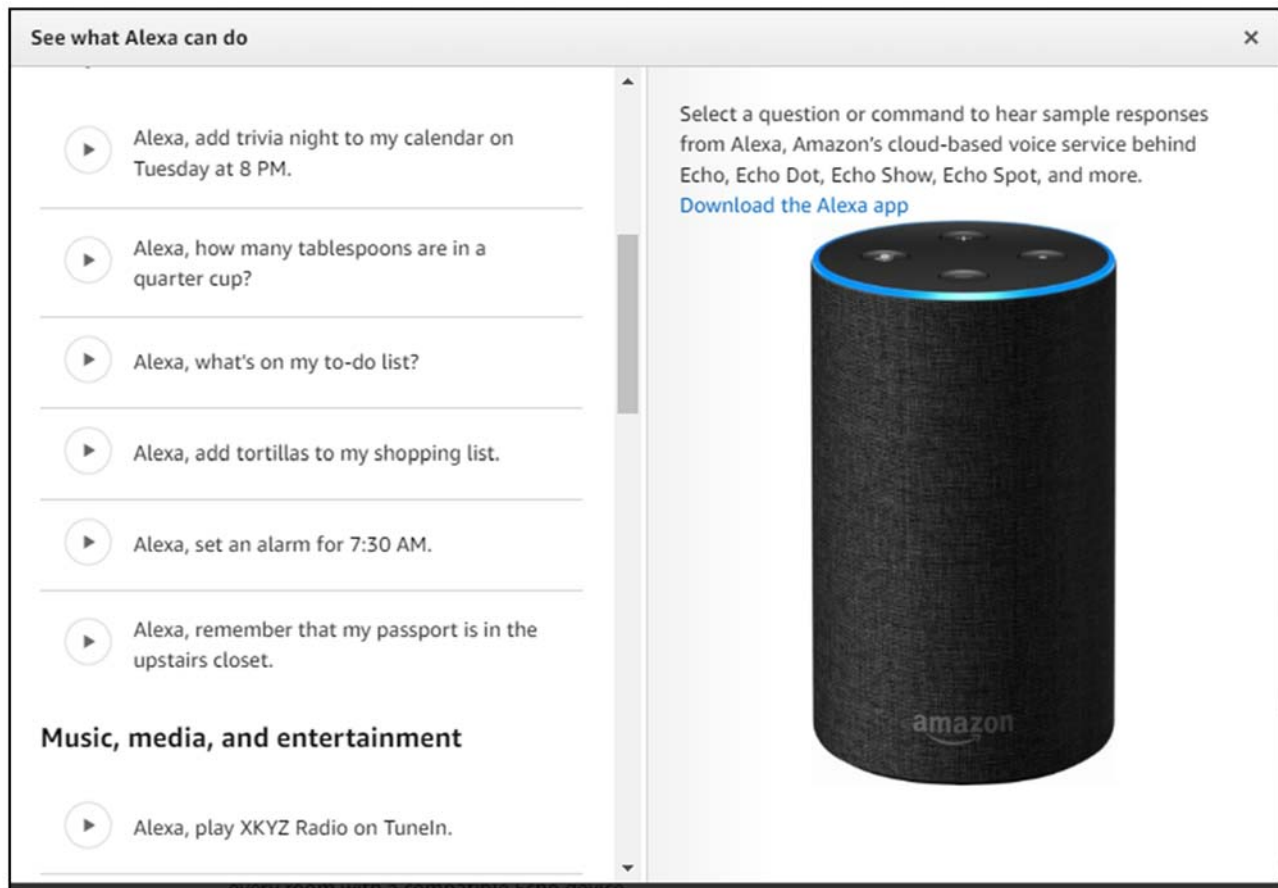
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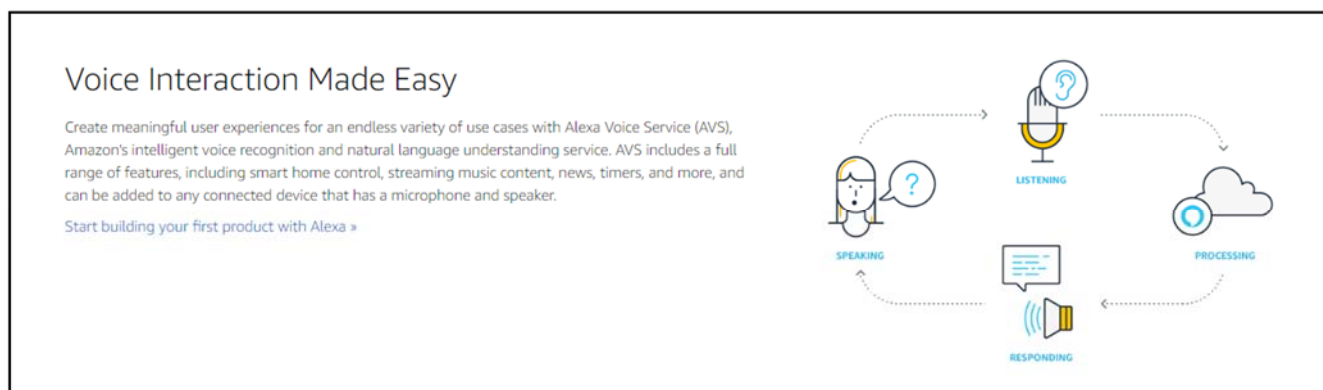
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See, e.g., <https://developer.amazon.com/alexa-voice-service/what-is-avs?linkCode=w61&imprToken=r0iiuJ6M7dIbzmX940rclw&slotNum=1>

Be together more



Calling

Making calls with Alexa is easy. Reach friends and family on their Alexa-enabled device, the Alexa app, or their home and mobile numbers in the US, Canada and Mexico – for free. Once you verify your phone number and sync your contacts in the Alexa app, just ask Alexa to call any of your contacts by name to make hands-free calls while you multitask. You can also make video calls to friends and family between any Echo Show, Echo Spot, or the Alexa app.

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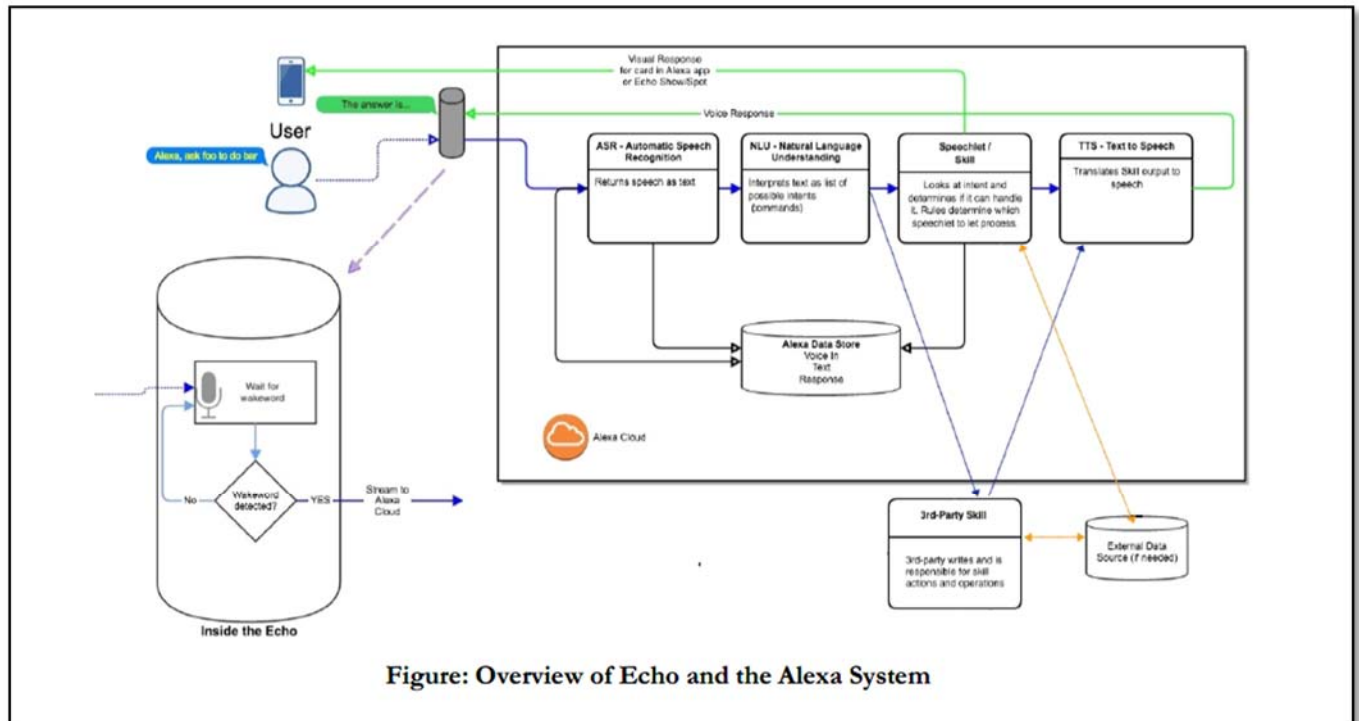
Just ask:
“Alexa, call Mom.”
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With Echo Connect, you can connect your home phone to your Alexa-enabled device to make and receive calls from anyone, using just your voice. With an Echo Connect, you can also call premium rate, emergency, and international numbers (carrier charges apply).

See, e.g., https://www.amazon.com/b/ref=aeg_lp_comm_d/ref=s9_acss_bw_cg_aegflp_1b1_w?node=17934681011&pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-6&pf_rd_r=JCEXPV9CF AK9TVXXVEKA&pf_rd_t=101&pf_rd_p=02147624-e148-4901-b449-773097cfa62e&pf_rd_i=17934672011.

78. The computing device of the Amazon Accused Products in conjunction with Alexa is configured to retrieve the instruction set corresponding to the recognition grammar provided by the speaker-independent speech-recognition device.

79. For example, because the Amazon Echo in conjunction with Alexa can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command.



See, e.g., Amazon, White Paper, Alexa Privacy and Data Handling Overview (July 20, 2018) at 1.

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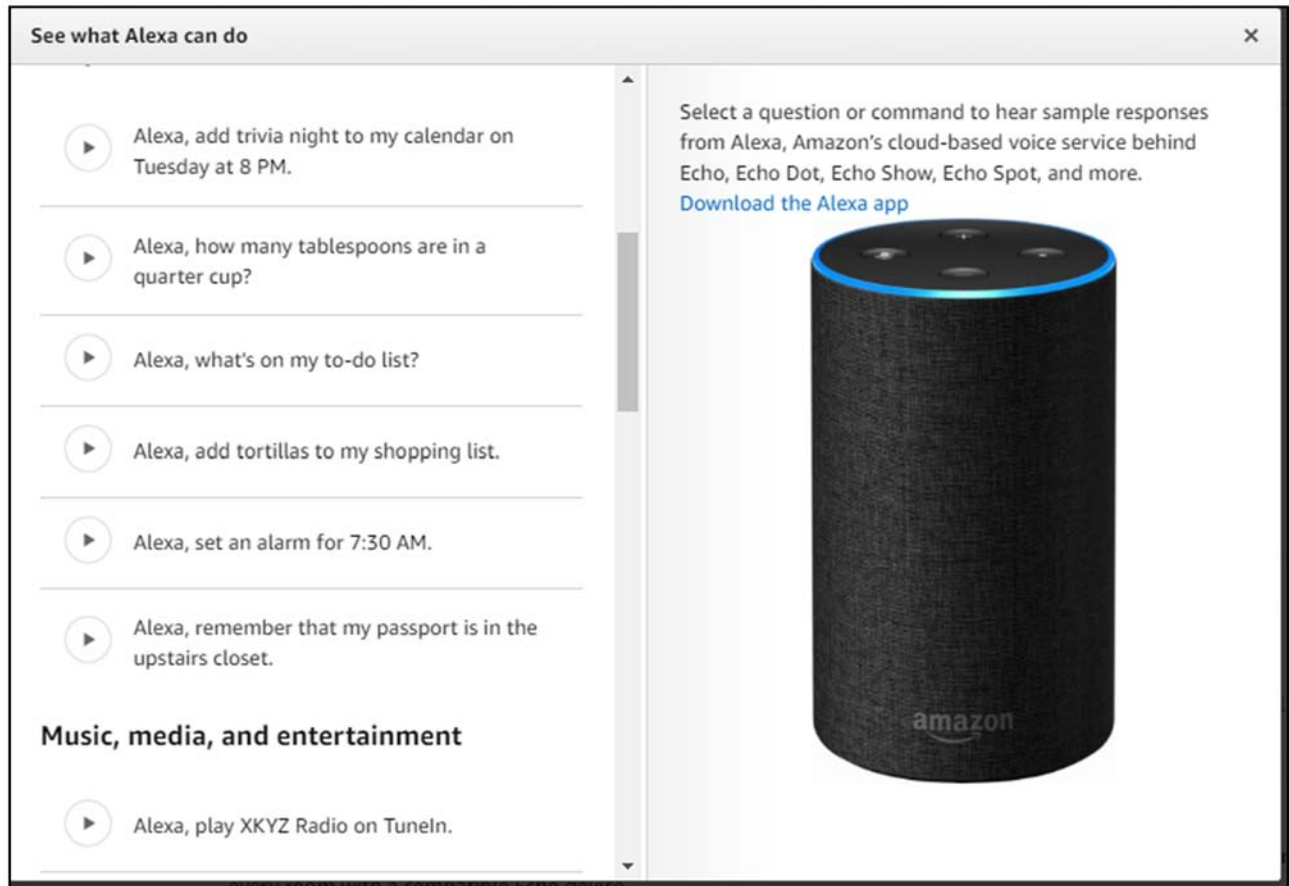
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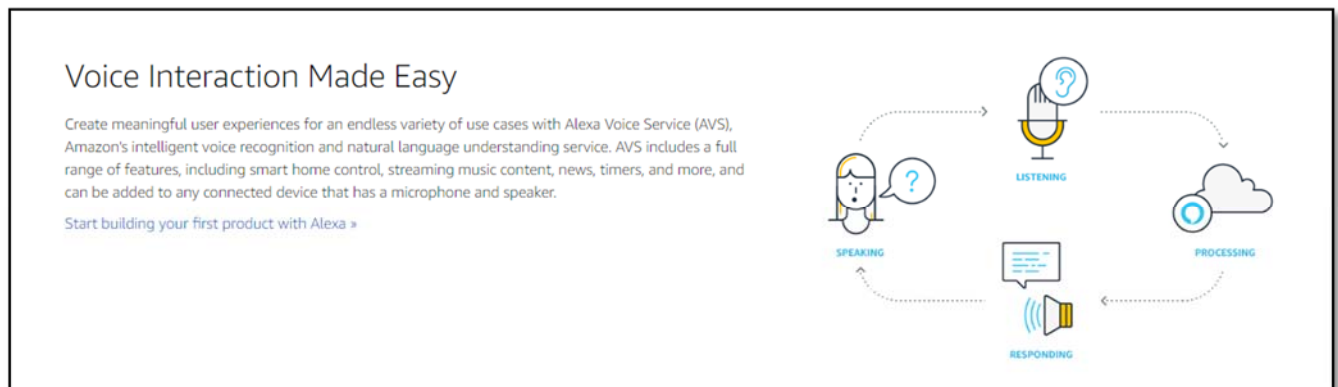
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See, e.g., <https://developer.amazon.com/alexa-voice-service/what-is-avs?linkCode=w61&imprToken=r0iiuJ6M7dIbzmX940rclw&slotNum=1>

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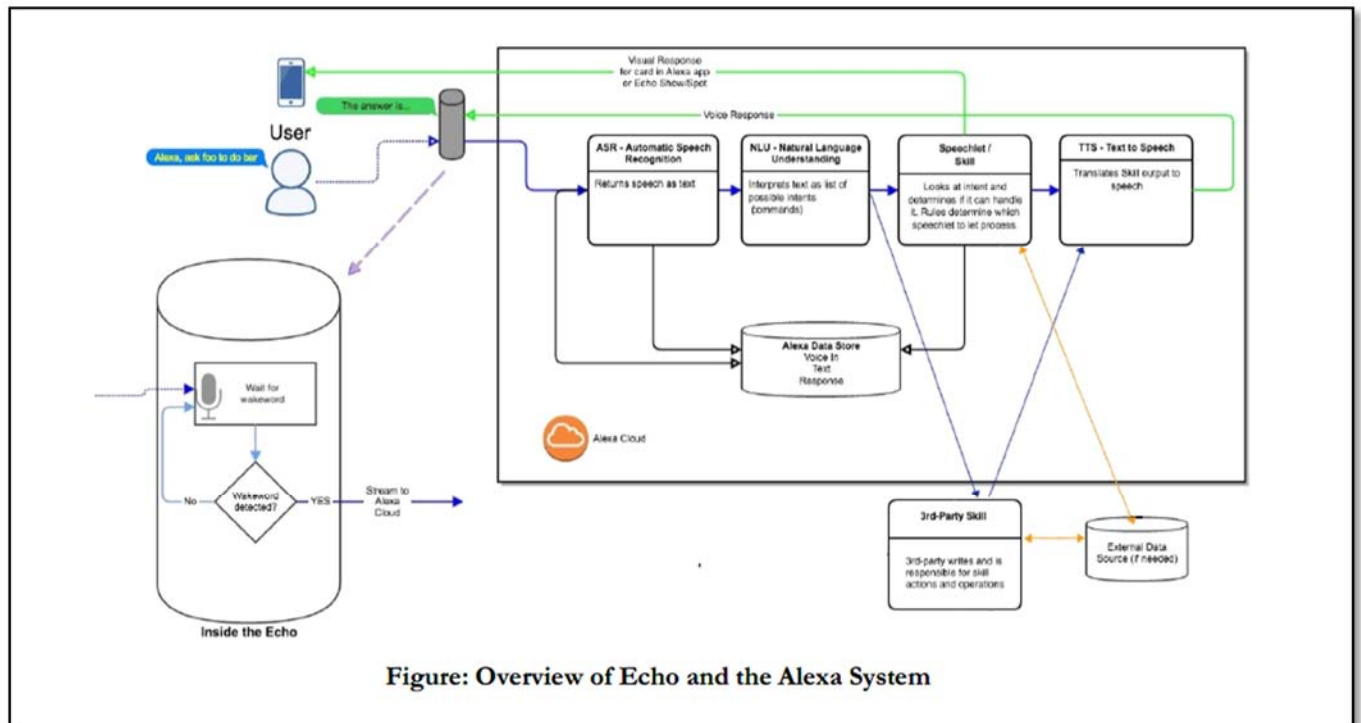
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80. The Amazon Accused Products in conjunction with Alexa include the computing device further configured to access at least one of the plurality of web sites identified by the instruction set to obtain the information to be retrieved, wherein the computing device is further configured to periodically search via the one or more networks to identify new web sites and to add the new web sites to the plurality of web sites, the computing device configured to access a first web site of the plurality of web sites and, if the information to be retrieved is not found at the first web site, the computer configured to access the plurality of web sites remaining in an order defined for accessing the listing of web sites until the information to be retrieved is found in at least one of the plurality of web sites or until the plurality of web sites have been accessed.

81. The Amazon Echo in conjunction with Alexa is a system for retrieving information from web sites by uttering speech commands into a voice enabled device. For example, Amazon indicates that the Amazon Echo in conjunction with Alexa will make tasks easier.



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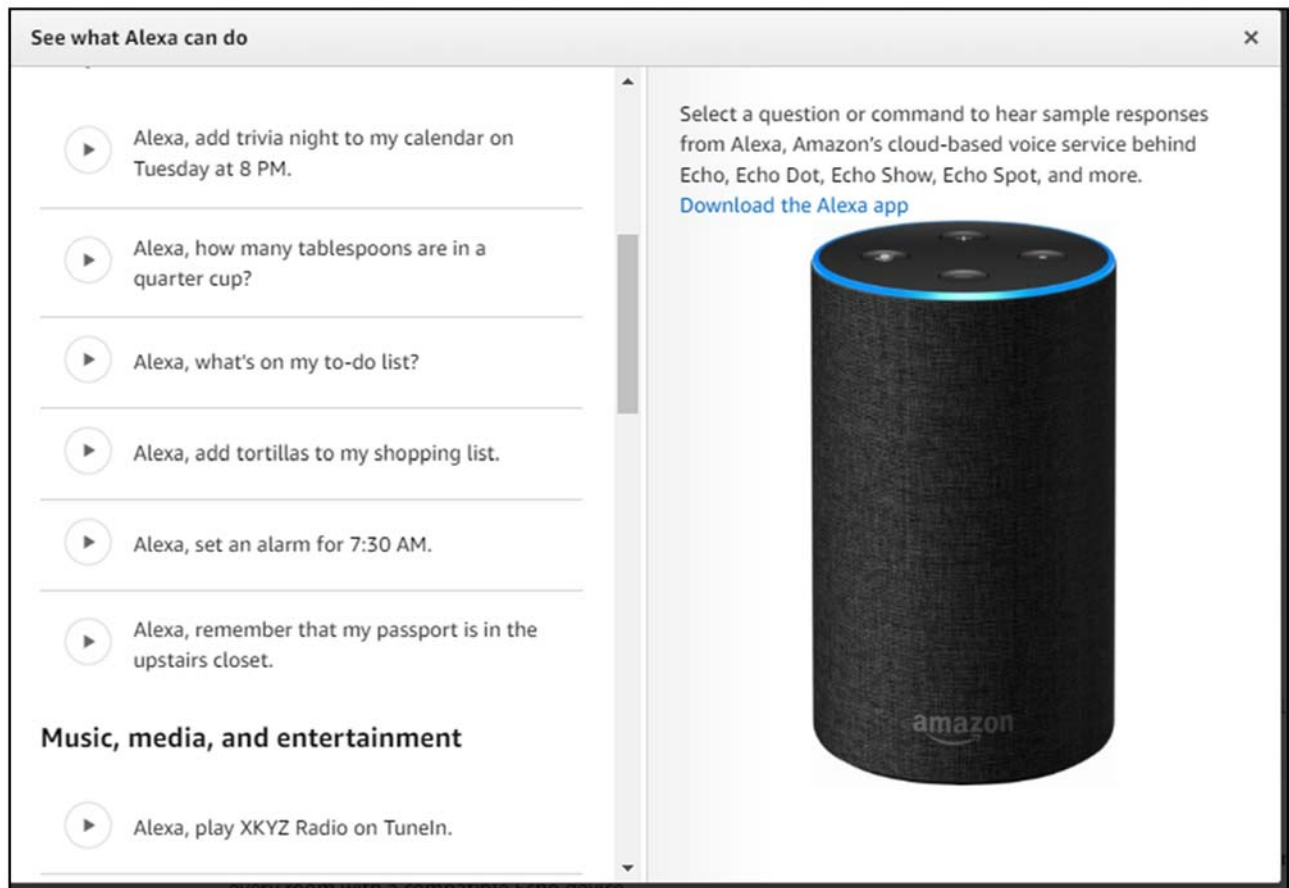
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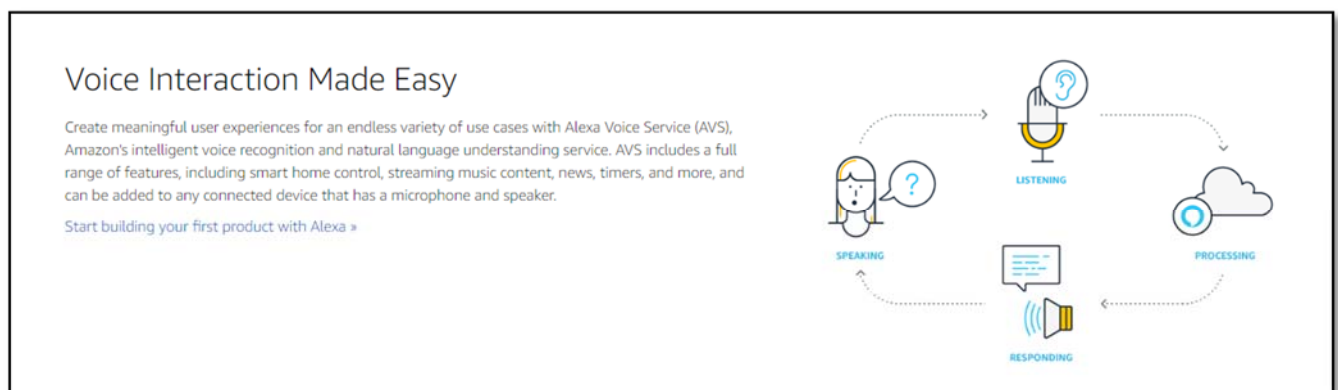
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82. The Amazon Echo device in conjunction with Alexa retrieves information from pre-selected websites that have already been crawled.

The New York Times reports that Microsoft and Amazon partnered in May last year, after Amazon CEO Jeff Bezos raised the idea with Microsoft CEO Satya Nadella at Microsoft's CEO summit. Amazon's push to partner more closely with Microsoft makes sense, as the pair are both trying to fend off Google's own assistant and Microsoft already helps power Alexa queries through its Bing search engine.

See, e.g., <https://www.theverge.com/2017/8/30/16224876/microsoft-amazon-cortana-alexa-partnership>

How Bing delivers search results

As an online search engine, the primary objective of Bing is to connect users with the most relevant search results from the web—providing easy access to quality content produced by web publishers. To do this, Bing automatically crawls the web to build an index of new and updated pages (or URLs) to display as a set of search results relevant to a user-initiated search or action. The content of these pages may reference or contain various online resources and content including websites, images, videos, documents, and other items. Search results are generated by using computer algorithms to match the search terms you enter with results in our index. In general, we try to provide as comprehensive and as useful a collection of displayed search results as we can. We design—and continually improve—our algorithms to provide the most relevant and useful results.

See, e.g., <http://help.bing.microsoft.com/#apex/18/en-US/10016/0>

Bingbot is the name of the crawler used by Bing to crawl or “spider” the web. It is Bingbot's job to find new and updated pages on websites across the Internet, so that they can be processed for indexation. When crawling a website, Bingbot looks at robots.txt for special instructions from the website owner. Bingbot honors robots.txt directives, including the *crawl-delay* setting, and, in the absence of a crawl-delay, respects the input from Webmasters in the Crawl Control Feature.

See, e.g., <https://www.bing.com/webmaster/help/how-to-report-an-issue-with-bingbot-25c19802>

Meet our crawlers

Bing operates five main crawlers today:

CRAWLER	ROLE OF THIS PARTICULAR CRAWLER
Bingbot	Bingbot is our standard crawler and handles most of our crawling needs each day. Bingbot uses a couple of different user agent strings which include several mobile variants with which we crawl the mobile web (see here for details on the latter).
MSNBot	MSNBot used to be our standard crawler before the advent of Bingbot and still handles some of our crawling duties.
MSNBot-Media	MSNBot-Media is our crawler for images and video.
AdlidxBot	AdlidxBot is the crawler used by Bing Ads. AdlidxBot is responsible for crawling ads and following through to websites from those ads for quality control purposes. Same as Bingbot, AdlidxBot has both desktop and mobile variants.
BingPreview	BingPreview is used to generate page snapshots. You can find more details about Bing Preview here . Note that BingPreview also has "desktop" and "mobile" variants.

See, e.g., <https://www.bing.com/webmaster/help/which-crawlers-does-bing-use-8c184ec0>

Bing's crawler, Bingbot is a key component of the Bing platform. Bingbot's main function is to:

- Download webpages to get the latest content and discover new links from existing known links.
- Verify that web documents already indexed are still valid, not dead links, helping to keep the Bing index comprehensive and fresh to answer customer queries with relevant results.

See, e.g., <https://www.searchenginejournal.com/why-how-bing-plans-to-improve-its-crawler-bingbot/291979/#close>

For example, Bing customers searching for the latest space rocket launch can search and find new relevant webpages only seconds after this rocket launch. To be able to link to these new URLs, we have to discover, select, crawl, process, and then index them.

To discover these new URLs, we have to crawl regularly existing known URLs to monitor for new URLs.

Once discovered, we have to crawl to get the content for these new URLs.

We have to continue crawling these newly indexed URLs regularly to check for potential content changes and verify that these webpages are still valid, not dead links.

In other words, we crawl each URL in our system more than once.

See id.

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83. The retrieved information is in an audio form via said voice enabled device as Amazon indicates that one can “use voice to set timers, add items to lists, and create calendar events and reminders. [One] can also check the news, weather or traffic.”

Always ready to help

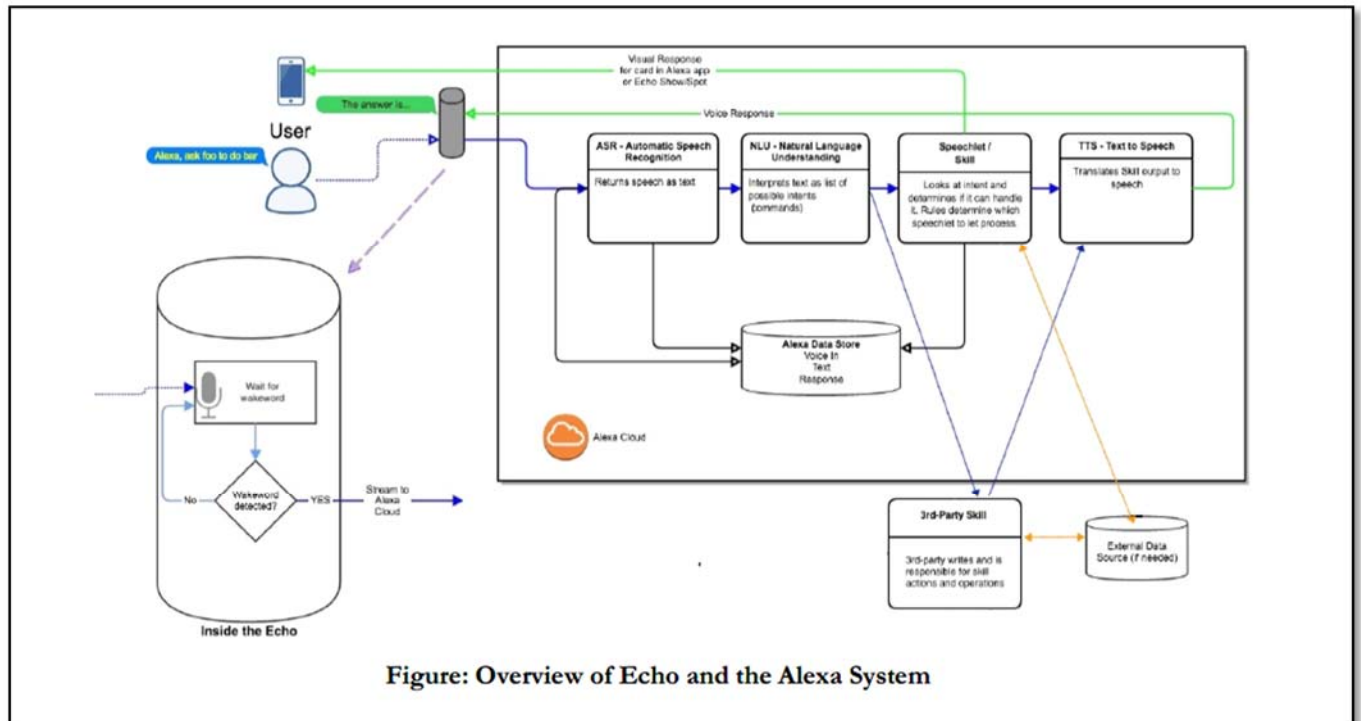
Make your life easier at home. Use your voice to set timers, add items to lists, and create calendar events and reminders. You can also check the news, weather, or traffic. Ask for sports scores, movie showtimes, restaurant hours, or information.



See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=echo&qid=1562871943&s=gateway&sr=8-2.

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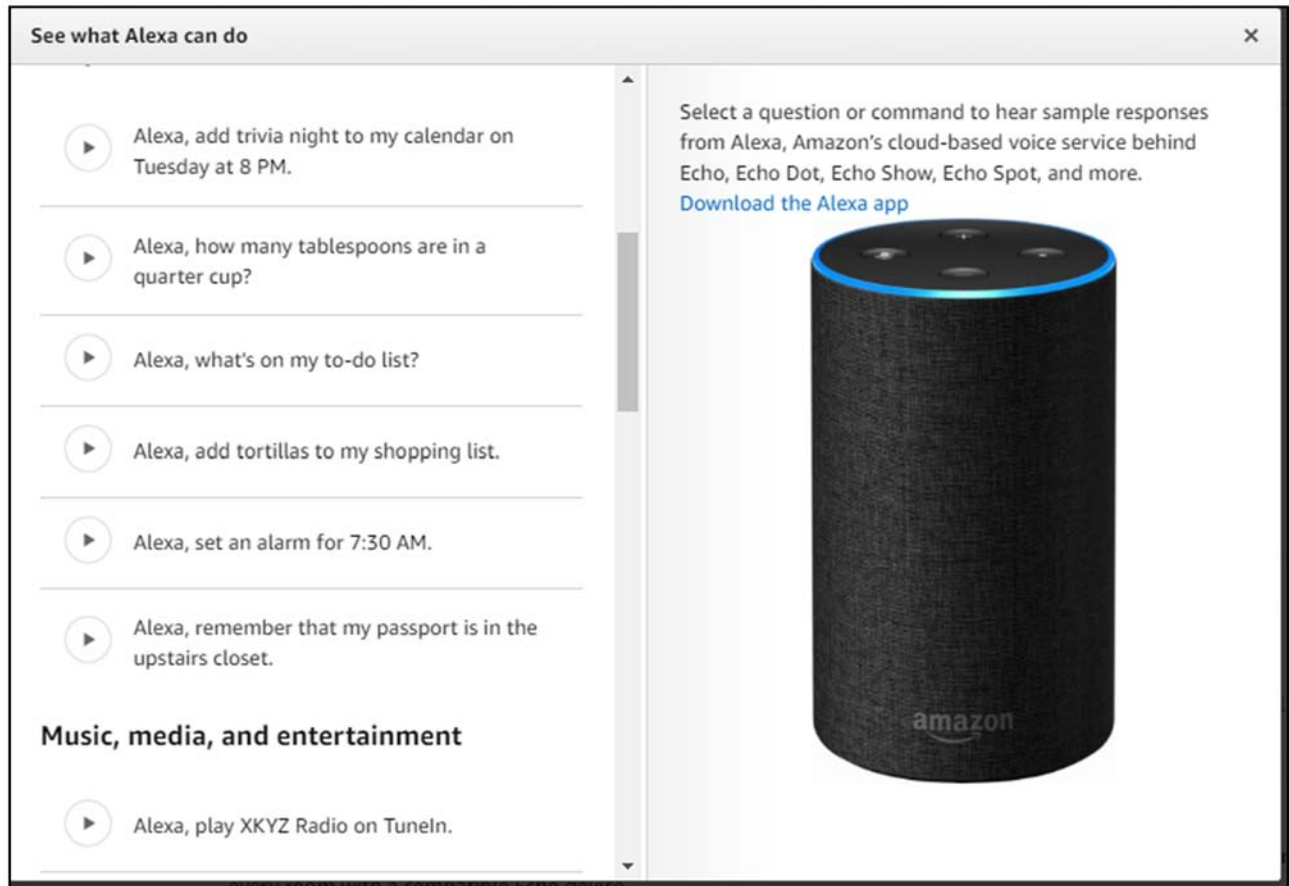
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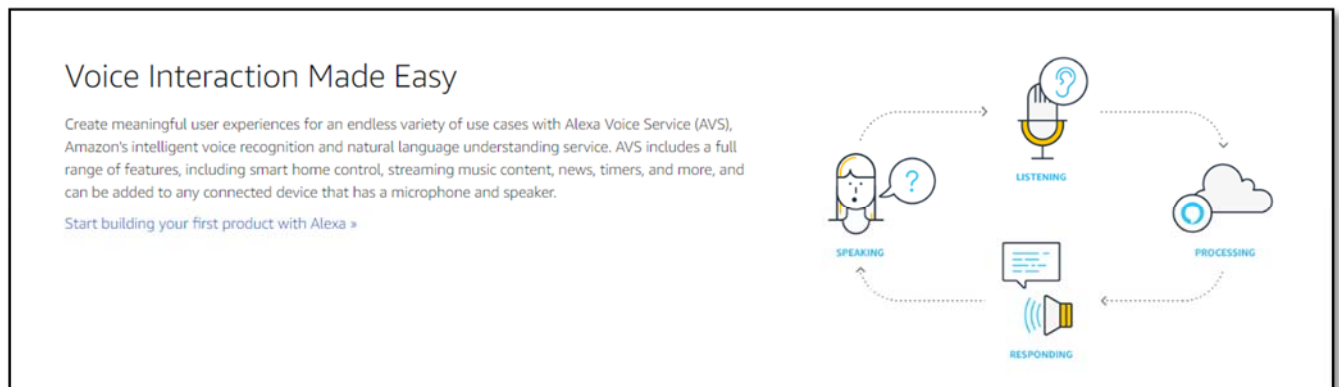
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“Alexa, hang up.”

With Echo Connect, you can connect your home phone to your Alexa-enabled device to make and receive calls from anyone, using just your voice. With an Echo Connect, you can also call premium rate, emergency, and international numbers (carrier charges apply).

See, e.g., https://www.amazon.com/b/ref=aeg_lp_comm_d/ref=s9_acss_bw_cg_aegflp_1b1_w?node=17934681011&pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-6&pf_rd_r=JCEXPV9CF AK9TVXXVEKA&pf_rd_t=101&pf_rd_p=02147624-e148-4901-b449-773097cfa62e&pf_rd_i=17934672011.

86. The retrieved information is in an audio form via said voice enabled device as Amazon indicates that one can “use voice to set timers, add items to lists, and create calendar events and reminders. [One] can also check the news, weather or traffic.”



See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=echo&qid=1562871943&s=gateway&sr=8-2.

87. The speech synthesis devices of the Amazon Accused Products in conjunction with Alexa are further configured to transmit the audio message to the users via the voice-enabled device.

88. For example, the retrieved information is in an audio form via said voice enabled device as Amazon indicates that one can “use voice to set timers, add items to lists, and create calendar events and reminders. [One] can also check the news, weather or traffic.”



See, e.g., https://www.amazon.com/All-new-Echo-Plus-2nd-built/dp/B0794W1SKP/ref=sr_1_2?keywords=echo&qid=1562871943&s=gateway&sr=8-2.

89. In addition to directly infringing the '084 Patent, Amazon indirectly infringes the '084 Patent pursuant to 35 U.S.C. § 271(b) and (c). Amazon has had knowledge of the '084 Patent since at least the filing of this complaint, and has been on constructive notice of the '084 Patent due to Parus' marking since at least February 21, 2018. By the time of trial, Amazon will have known and intended (since receiving such notice) that their continued actions would actively induce the infringement of the claims of the '084 Patent.

90. Amazon indirectly infringes the '084 Patent by instructing, directing and/or requiring others, including customers, purchasers, users and developers, to perform one or more of the steps of the method claims, either literally or under the doctrine of equivalents, of the '084 Patent, where all the steps of the method claims are performed by either Amazon, its customers, purchasers, users, and developers, or some combination thereof. Amazon knew or should have known that it was inducing others, including customers, purchasers, users, and developers, to

infringe by practicing, either themselves or in conjunction with Amazon, one or more method claims of the '084 Patent.

91. Upon information and belief, Amazon knowingly and actively aided and abetted the direct infringement of the '084 Patent by instructing and encouraging its customers, purchasers, users, and developers to use the '084 Patent methods and technology. These instructions of encouragement include, but are not limited to, using the accused products as described in the claims of the '084 Patent, in advertising and promoting the use of the '084 Patent's claimed technology, and as further described in above.

92. Amazon has also infringed, and continues to infringe, claims of the '084 Patent by offering to commercially distribute, commercially distributing, making and/or importing the Amazon Accused Products, which are used in practicing the process, or using the systems, of the '084 Patent, and constitute a material part of the invention. Amazon knew the components in the Amazon Accused Products to be especially made or especially adapted for use in infringement of the '084 Patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. For example, the ordinary way of using the Amazon Accused Products infringes the patent claims, and as such, is especially adapted for use in infringement as set forth above. Accordingly, Amazon has been, and currently is, contributorily infringing the '084 Patent, in violation of 35 U.S.C. § 271(c).

PRAYER FOR RELIEF

WHEREFORE, Parus requests the Court grant the relief set forth below:

A. Enter judgment that Defendant has infringed, and continues to infringe, one or more claims of the '431 Patent and/or the '084 Patent;

B. Enter judgment that Defendant's acts of patent infringement are willful;

C. Temporarily, preliminarily, or permanently enjoin Defendant, its parents, subsidiaries, affiliates, divisions, officers, agents, servants, employees, directors, partners, representatives, all individuals and entities in active concert and/or participation with Defendant, and all individuals and/or entities within Defendant's control from engaging in the aforesaid unlawful acts of patent infringement;

D. Order Defendant to account for and pay damages caused to Parus by Defendant's unlawful acts of patent infringement;

E. Award Parus increased damages and attorney fees pursuant to 35 U.S.C. §§ 284 and 285;

F. Award Parus the interest and costs incurred in this action; and

G. Grant Parus such other and further relief, including equitable relief, as the Court deems just and proper.

DEMAND FOR JURY TRIAL

Plaintiff demands a jury trial for all issues deemed to be triable by a jury.

DATED: August 6, 2019

Respectfully submitted,

By /s/ Michael N. McNamara w/permission by T.
John Ward, Jr.

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